



RowFlow Operators Manual



This Page Intentionally Left Blank

**Precision Planting, Inc.**

23207 Townline Road Tremont, IL 61568
ph. (309) 925-5050 fax. (309) 925-5029
info@precisionplanting.com
2020support@precisionplanting.com

Precision Planting Warranty & Liability Policy (Revision effective 7-1-10)

Warranties, Disclaimers, and Limitation of Remedies:

These terms and conditions represent the entire agreement between the parties hereto and there are no collateral, oral, or other agreements or understandings, unless expressly stipulated.

Precision Planting warrants that all Precision Planting products, equipment and merchandise are free from defects in material and workmanship. The term of the express warranty recited herein shall be limited to one (1) year from the date of sale by Precision Planting. This warranty shall only extend to the dealer if this warranty is properly presented to Customer. With respect to 20/20 SeedSense, AirForce and RowFlow, the express warranty recited herein shall only apply if such products are properly registered by the Customer.

These terms and conditions represent the entire agreement between the parties hereto and there are no collateral, oral, or other agreements or understandings, unless expressly stipulated.

The express warranty recited herein does not extend to any costs or damages other than one of the following, which Precision Planting shall elect at its sole discretion: replacement, repair, or refund of the purchase price. Precision Planting makes no other warranty of any kind whatsoever, express or implied.

ANY EXPRESS OR IMPLIED WARRANTIES OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE ARE HEREBY DISCLAIMED BY PRECISION PLANTING. THERE ARE NO WARRANTIES THAT EXTEND BEYOND THE DESCRIPTION ON THE FACE HEREOF.

Precision Planting is NOT LIABLE FOR CONSEQUENTIAL DAMAGES of any nature whatsoever, including without limitation lost yield, replanting cost, supplies or other expenses. Precision Planting is NOT LIABLE FOR INCIDENTAL DAMAGES of any nature whatsoever, including without limitation diagnostic and installation expenses, travel expenses, and shipping expenses. The limitations of remedy recited herein apply to any action by the Customer whether or not such action is based in warranty.

Some states or jurisdictions do not allow the exclusion or limitation of implied warranties, incidental damages or consequential damages; so the above limitations or exclusions may not apply to you.

Liability:

Customer assumes all liability for damages from accidents caused by or incurred in the use of transportation of said equipment. Customer agrees to indemnify and hold harmless the said Precision Planting, its officers, agents, and employees from any and all damages and/or liability to any person whomsoever arising out of or resulting from the use, storage, or transportation of said equipment by the Customer or anyone else while the equipment is in the custody of the Customer. The Customer acknowledges receipt of the equipment in good working condition and repair. In the event of any accident involving said equipment, Customer shall promptly furnish to Precision Planting a complete report in writing, with names and addresses of witnesses and parties involved and Customer shall make all reports required by law. Customer agrees to review and follow any published safety instructions in the product manual.

Notice of Non-Waiver:

The failure by Precision Planting, at any one or more time, to insist upon the strict performance by the Customer of the covenants, conditions and/or terms of this agreement, shall not be construed as a waiver of Precision Planting's right to demand strict compliance with and performance of all covenants, conditions and/or terms hereof. Notice of demand for strict compliance is hereby waived by the Customer, and time is expressly made of the essence of this agreement.

Choice of Law:

Any dispute or claim arising from or related to this Policy, or related to a product governed by this Policy, shall be governed by the laws of the State of Illinois.

Safety Information



Always wash your hands after working on or around agricultural equipment prior to eating, drinking, smoking, chewing, etc...



Always use the proper Personal Protective Equipment (PPE) for any task.

Examples include: Gloves when handling sharp or abrasive materials
Eye protection when handling contents or systems under pressure (ie. Hydraulic, Pneumatic, Water)
Welding helmet, Welding gloves, and welders clothing when welding/torching



Prior to working under or at ground level of any equipment secure the machinery from movement; accidental user operation or simple rolling of equipment. This should involve Lock-Out tags at the battery, removal of the Ignition key, "Do Not Operate" signs placed at key locations, as well as wheel chocks as necessary.



When working on a vehicle or implement's hydraulic system, suspended components may suddenly drop. If you are working on or around the implement at this time serious injury could result. If possible lower the implement or attachment to the ground before beginning any work. Alternatively; use mechanical lock-up devices to secure any components in their lifted positions.



Agricultural equipment may have been exposed to many types of chemicals. Any chemicals or residues should be removed from the planter prior to beginning work. Obey all existing (new & original) warning signs and caution labels on all equipment.



When working on or around equipment that has been or is running many components may get extremely hot. To avoid injury &/or serious burns allow all equipment components to properly cool before working on or around them.



Avoid wearing loose or ragged clothing or jewelry around equipment, with special attention to avoid moving parts.



Route and secure all wires and connections to avoid crimping or damaging. This may result in unexpected shortages and shocks.



Use extreme caution when working on pressurized systems (Air, Water, Oil). Relieve all pressure from a system before disconnecting lines, fittings, etc... Use a cloth or other obstruction to divert possible spray when disconnecting hose connections, fittings, fill caps, breathers, etc. Always use gloves, NEVER use bare hands. To locate or check for leaks use cardboard, never your hand.



Electrical components and devices may contain high voltages and should be kept dry and closed. There are no serviceable components in this unit. Do not open this display unit, the AirForce Module, Row Flow Module, or the Smart Connector. Opening of the covers should be done by, or with guidance from trained personnel.

Table of Contents

General

Legal & Safety.....	2
System Requirements.....	3
Table of Contents.....	4

GPS Setup

Configuring your Planter.....	7-9
Tractor Setup.....	10,11
Frame Type.....	11,12
Seed Exits.....	12,13
GPS Setup Notes.....	14

Drive Motor Setup

PWM Drive Motor Setup.....	15,16
Lift Switch Calibration.....	16,17
Primary Speed Source.....	17
Motor Calibration.....	17,18
Radar Calibration.....	19
Serial Drive Motor Setup.....	20-22

Swath Configuration

Control Style.....	23
Calibration State.....	24
Swath Calibration.....	25
Coverage Pattern.....	26

RowFlow Operations

Dashboard Screen.....	27
RowFlow Control Screen.....	28
Variable Rate Control.....	28,29
Loading a Prescription.....	30,31
AutoMap Express.....	32,33
Swath Control.....	34,35
Boundaries.....	35-39
Creating Simulated Headlands.....	39,40
Loading a Field Boundary.....	40

Diagrams

Wiring Diagrams.....	41-58
----------------------	-------

This Page Intentionally Left Blank

GPS Setup

Configuring your Planter

Step 1: Planter Setup

To configure your planter in the SeedSense screen, press the **SETUP** button on the dashboard screen and then select the **PLANTER** button in the top left of the Plant tab. This screen shows each configuration that can be set for your planter. The planter diagram at the bottom of the screen will change to reflect changes you make in planter setup.

Planter Setup								Home
Planter Make		Rows		Spacing				Enter
John Deere		18		30 in				
Active Rows	Meter Type	Drive Type		Down Force System				GPS Setup
All	Vac (eSet)	Hydraulic						
Effective Row Spacing Used for Population Calculations				Effective Planter Width Used for Acres Counters				RowFlow Setup
30 in				45.0 ft				
								Back
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18								

Step 2: Planter Make

Press the **PLANTER MAKE** button. Choose the appropriate make for your planter. Choosing the planter make will define some of the choices available in later selection screens.

Planter Setup			Home
Planter Make			Enter
CNH	John Deere	Great Plains	↑
Kinze	White		
			↓
			←
			Back

Step 3: Number of Planter Rows

Press the **ROWS** button. Choose the number of rows on your planter. Use the arrow at the right side of the screen for more options. Under the selections for John Deere, the DB options refer to the number of rows (i.e. "DB48" refers to a 48 row Deere Bauer not a 48' Bauer bar). You will enter the total number of rows for your planter and use the active rows feature to define which ones are planting.

Planter Setup				Home
Number of Planter Rows				Enter
3	4	6	8	
10	11	12	15	↑
16	18	20	23	
24	DB24	DB26	31	↓
32	DB32	DB36	DB48	
				←
				Back

GPS Setup (Continued)

Step 4: Row Spacing

Press the SPACING button. Choose the spacing for the rows on your planter when all rows are planting. If the appropriate spacing is not available, press OTHER to manually enter the row spacing.

Planter Setup				Home
Row Spacing				Enter
15 in	20 in	22 in	30 in	↑
36 in	38 in	40 in	Other	↓
				← Back

Step 5: Active Rows

Press the ACTIVE ROWS button. Define which planter rows will be active. The system defaults to "All". You may also select from "Left", "Right", "Odd", or "Even" primarily for use on split row planters when only planting on half your rows. You may also select "List" to define specific rows that are planting or not planting, an application primarily used when planting seed corn.

Planter Setup			Home
Active Rows			Enter
All	Odd	Even	↑
Left	Right	List	↓
			← Back

Step 6: Meter Type

Press the METER TYPE button. Select the type of meters on your planter from the list. Pressing OTHER allows you to type in a meter type if yours is not in the list provided.

Planter Setup			Home
Meter Type			Enter
Finger (Kinze)	Finger (JD)	Finger (PP)	↑
Pos+ Air (White)	Vac (CNH)	Vac (eSet)	↓
Vac (JD cell)	Vac (JD flat)	Other	← Back

Step 7: Drive Type

Press the DRIVE TYPE button. Select your planter drive type from the list. Again, pressing OTHER allows you to manually enter a drive type.

Planter Setup			Home
Drive Type			Enter
Ground	Hydraulic	Other	↑
			↓
			← Back

GPS Setup (Continued)

Step 8: Down Force System

Press the DOWN FORCE SYSTEM button. Select your down force system from the list or press OTHER to manually enter a different option. Note: The selection “Dual Factory Airbags” refers to the original John Deere pneumatic down force system which used two smaller bags side-by-side for down pressure.

Planter Setup			Home
Down Force System			Enter
Single Factory Airbags	Dual Airbags	Prec. Planting Airbags	↑
Side Springs	Adj Heavy Duty Springs	Other	↓
			← Back

Step 9: Lift Force System

After you have selected your down force system, select your Lift Force System.

Planter Setup		Home
Lift Force System		Enter
Prec. Planting Airbags	None	↑
		↓
		← Back

Step 10: Effective Row Spacing and Effective Planter Width

These values are automatically calculated based on row width, number of rows, and active rows. They can be manually changed by pressing the button and entering a new value.

Planter Setup				Home
Effective Row Spacing				Enter
7	8	9	Back	↑
4	5	6	-	↓
1	2	3	00	← Back
0	.	000		

Step 11: GPS Setup

Press the GPS SETUP button on the right side of the screen.

GPS Setup Selection		Home
	Tractor	Enter
	Planter	↑
	GPS Communications	↓
		← Back

GPS Setup (Continued)

Step 12: GPS Setup – Tractor

Press the TRACTOR button. This screen allows you to enter measurements on your tractor so that the SeedSense can more accurately display your coverage map. Entering your TRACTOR MAKE and TRACTOR MODEL provide useful troubleshooting information. Press each button to enter the information. At this time, FRONT is the only steering option available.

GPS Setup - Tractor			Home
Tractor Make	Tractor Model	Steering	Enter Back
John Deere	8530	Front	
GPS Offset Dimensions Pivot Center Forward Height 41 in 16.5 in 29 in 112 in			

Step 13: Pivot Offset

Press the PIVOT button. Measure the distance from the rear axle of the tractor to the pivot point. Enter the distance in inches (or centimeters if the display is set to Metric units). Press ENTER.

GPS Offset			Home
Tractor Make	Tractor Model	Steering	Enter Back
John Deere	8530	Front	
Pivot Offset (in) 41			

Step 14: Center Offset

Press the CENTER button. Measure the distance to the right or left of the center line of the tractor from your GPS antenna and enter it. Use the flip button to change the orientation of the measurement from right to left. If the antenna is exactly on the center, enter "0". Press ENTER.

GPS Offset			Home
Tractor Make	Tractor Model	Steering	Enter Back
John Deere	8530	Front	
Center Offset (in) 41			

Step 15: Forward Offset

Press the FORWARD button. Measure the distance from the rear axle of the tractor to the location of the GPS antenna and enter it. Press ENTER.

GPS Offset			Home
Tractor Make	Tractor Model	Steering	Enter Back
John Deere	8530	Front	
Forward Offset (in) 29			

GPS Setup (Continued)

Step 16: Height Offset

Press the HEIGHT button. Measure the distance from the ground to the GPS antenna and enter it. Press ENTER to return to the Tractor setup screen, verify your entries, and then press ENTER to return to the GPS Setup Selection screen.

GPS Offset			Home
Tractor Make	Tractor Model	Steering	Enter
John Deere	8530	Front	
123 456 789 0 . C Height Offset (in) 112			Back

Step 17: GPS Setup - Planter - with "Single" frame type

Press the PLANTER button. This screen allows you to enter measurements on your planter so that the SeedSense can more accurately display your coverage map.

GPS Setup - Planter		Home
Frame Type	Hitch Style	Enter
Single	Drawn	
		Custom Table Setup
A B Wheel Distance 204 in Seed Exit 1 216 in All		RowFlow Setup
		Back

Step 18: Frame Type

Press the FRAME TYPE button in the top left corner. Select the frame type that best fits your planter.

GPS Setup - Planter		Home
Select Planter Frame Type		Enter
Single		
Dual-Front		
Center Trailing		
Dual-Rear		Back

Step 19: Hitch Style

Press the HITCH STYLE button in the top right corner. Select the hitch style that best fits your planter.

GPS Setup - Planter		Home
Select Planter Hitch Type		Enter
Drawn	2 - Point Pivot	
3 - Point		
		Back

GPS Setup (Continued)

Step 20: Planter – with “Dual Rear” frame type

Now you will measure and enter measurement values for your planter. Depending on the frame type selected, there may be as few as two measurements to enter or as many as five.

GPS Setup - Planter					Home
Frame Type		Hitch Style			Enter
Dual - Rear		Drawn			
					Custom Table Setup
					RowFlow Setup
Wheel Distance	Seed Exit 1	Seed Exit 2	Off Center Distance 1	Off Center Distance 2	Back
204 in	216 in	0 in	0 in	0 in	
All	None				

Step 21: Wheel Distance

Press the WHEEL DISTANCE button. With the planter lowered, measure the distance from the pivot point to the lift wheels. Enter the value. Press ENTER.

GPS Setup - Planter					Home
					Enter
7	8	9			↑
4	5	6			↓
1	2	3			←
0	.	C			Back
			Wheel (in)	204	
Enter the distance from the pivot point to the lift wheels when the planter is lowered					

Step 22: Seed Exit 1

Press the SEED EXIT 1 button. Measure the distance from the pivot point to the seed tube exit for all rows (if frame type is “Single”) or for the forward most set of rows (for all other frame types). Enter the value and press ENTER.

GPS Setup - Planter					Home
					Enter
7	8	9			↑
4	5	6			↓
1	2	3			←
0	.	C			Back
			Seed Exit 1 (in)	216	
Enter the distance from the pivot point to center of the lowered seed exit point					

Step 23: Seed Exit 1 Rows

For all planter frames other than “Single” you will need to define which planter rows correspond to this measurement. Select from the options available or press LIST to choose specific rows manually.

GPS Setup - Planter					Home
Seed Exit 1 Rows					Enter
All	Odd	Even			↑
Left	Right	List			↓
					Back

GPS Setup (Continued)

Step 24: Seed Exit 2 & Seed Exit 2 Rows

For all planter frames other than “Single” you will be prompted to enter measurements for the other rows on your planter in the same way.

The screen displays a numeric keypad on the left with digits 7-9, 4-6, 1-3, and 0, a decimal point, and a 'C' (clear) button. On the right, there is a diagram of a planter frame with a pivot point and a seed exit point. Below the diagram, the text reads: 'Seed Exit 2 (in)' followed by an input field containing '0'. Below the input field, it says: 'Enter the distance from the pivot point to center of the furthest lowered seed exit point'. On the far right, there are navigation buttons: 'Home', 'Enter', an up arrow, a down arrow, and 'Back'.

The screen displays the title 'GPS Setup - Planter' and 'Seed Exit 2 Rows'. Below the title, there are six selection buttons arranged in two rows: 'All', 'Odd', 'Even' in the top row, and 'Left', 'Right', 'List' in the bottom row. On the right side, there are navigation buttons: 'Home', 'Enter', an up arrow, a down arrow, and 'Back'.

Step 25: Off Center Distance 1

For “Dual Front” and “Dual Rear” frame types, you will now enter the off center distance of each bar. For Off Center Distance 1, measure the distance from the pivot point to the center of the rows on the front set of rows. Repeat the measurement for the rear set of rows under Off Center Distance 2.

The screen displays the title 'GPS Setup - Planter' and 'Off Center Distance 1 (in)'. At the top left, there is a 'Flip' button. Below it is a numeric keypad with digits 7-9, 4-6, 1-3, and 0, a decimal point, and a 'C' (clear) button. On the right, there is a diagram of a planter frame with a pivot point and an off-center distance measurement line. Below the diagram, the text reads: 'Off Center Distance 1 (in)' followed by an input field containing '0'. Below the input field, it says: 'Enter the distance between the pivot point and the CENTER of the rows on the front frame'. On the far right, there are navigation buttons: 'Home', 'Enter', an up arrow, a down arrow, and 'Back'.

NOTE:

If your planter does not conform to the available frame types, you may use the CUSTOM TABLE SETUP button on the right side of the screen to enter the location of each row on your planter.



GPS Setup Notes

Drive Motor Setup

The 20/20 RowFlow system can, with one RowFlow Module (RFM), control three PWM hydraulic motors. To control more than three motors, a second RFM will be needed. To configure your PWM hydraulic motors, go to the RowFlow setup page. From the dashboard screen, press SETUP, then select the SYSTEMS tab, and then press the ROWFLOW button on the control side of the page. At the top of the RowFlow Setup screen, press the MOTOR CONFIGURATION button.

PWM Drive Motor Setup

The Drive Motor Setup screen includes all of the information related to configuring your drive motors. Up to three PWM Drive Motors can be configured OR two serial drive motors can be configured. For information on configuring serial drive motors, see page 20.

Step 1: Control State

To begin drive motor setup, press the black DRIVE MOTOR 1 button and select ENABLED.

Drive Motor 1 Setup		Home
Control State		Enter
Enabled Disabled		Return to Motor Setup
		Back

Step 2: Select Rows Driven by Motor

Next, select which planter rows will be driven by Motor 1. This may be All, Odd, Even, Left, Right, or List. When selecting List, you will define which rows are not controlled by this motor by touching those row numbers so that they have an "X" over them. When done selecting rows, press ENTER.

Drive Motor 1 Setup		Home
Select Rows Driven by Motor		Enter
All	Odd	Even
Left	Right	None
List		Return to Motor Setup
		Back

Step 3: Select Motor Brand

Now select the brand of the hydraulic motor being controlled by pressing the appropriate button.

Drive Motor 1 Setup		Home
Select Motor Brand		Enter
Precision Planting (100 pulses, 150 Hz)	John Deere (360 pulses, 175 Hz)	Kinze (360 pulses, 150 Hz)
CNH (360 pulses, 150 Hz)	Great Plains (360 pulses, 150 Hz)	Dickey John (360 pulses, 150 Hz)
Agco (360 pulses, 150 Hz)	Custom	Return to Motor Setup
		Back

Drive Motor Setup (Continued)

Step 4: Select Seeds per Meter Revolution

On this screen, select the number of seeds planted per revolution of the meter. If your metering system has a different number than any of the listed choices, press CUSTOM and enter the appropriate number. For instance, if using a six finger meter, enter "6" under Custom.

Drive Motor 1 Setup			Home
Select Seeds per Meter Revolution			Enter
30 eSet Corn, JD std	40 Sweet Corn Disk	108 JD Soybean Disk	
12 Standard Finger Meter	24 CNH Disk	Custom	Return to Motor Setup
			← Back

Step 5: Default Population

Finally, enter your default population. This is the population that the motors will plant when operating in an area without a prescribed population to be planted.

Drive Motor 1 Setup			Home
Default Population			
32000			Enter
7	8	9	Back
4	5	6	-
1	2	3	00
0	.	000	
			← Back

Step 6: Confirm Configuration

Now confirm the configuration of Drive Motor 1 by reviewing the settings displayed on the Drive Motor 1 button.

Note: Repeat Steps 1 – 6 for any additional motors.

Drive Motor Setup				Home
Lift Switch	Primary Speed Source	Motor Calibration	Radar State	
Uncalibrated	GPS	Uncalibrated	Uncalibrated	Enter
Drive Motor 1 Rows: All Brand: PP Seeds/Disk: 30 Default Pop: 32000		Drive Motor 2 Disabled		↑
Drive Motor 3 Disabled		Serial Motor 1 Disabled	Serial Motor 2 Disabled	↓
				← Back

Step 7: Lift Switch Calibration - Lowered

To begin calibrating your lift switch, press the LIFT SWITCH button in the top left corner of the Drive Motor Setup page. Make sure that your planter is lowered completely. Press the large black button in the middle of the screen to calculate your Lowered Percent.

Lift Switch Calibration			Home
Press with the Planter Lowered Completely			Abort Calibration
			Manual Value Entry
Lowered Percent	Lifted Percent	Planting Percent	
			← Back

Drive Motor Setup (Continued)

Step 8: Lift Switch Calibration – Lifted

Now lift your planter completely. Press the large black button in the middle of the page to calculate your Lifted Percent.

Lift Switch Calibration			Home
Press with the Planter Lifted Completely			Abort Calibration
			Manual Value Entry
Lowered Percent	Lifted Percent	Planting Percent	
15.0			← Back

Step 9: Lift Switch Calibration – Planting

Lastly, lower your planter to drive engagement height. Press the large black button in the middle of the page to calculate your Planting Percent. Press ENTER when calibration is complete.

Lift Switch Calibration			Home
Press with the Planter at Drive Engagement Height			Abort Calibration
			Manual Value Entry
Lowered Percent	Lifted Percent	Planting Percent	
15.0	85.0		← Back

Step 10: Primary Speed Source

The second button at the top of the Drive Motor Setup page designates your primary speed source. This should be set to GPS. If it is not, press the button and select GPS.

Drive Motor Setup		Home
Primary Speed Source		Enter
GPS	Radar	
		Curve Adjust
		ON
		← Back

Step 11: Motor Calibration

To calibrate your drive motors, press the MOTOR CALIBRATION button at the top of the Drive Motor Setup screen. This screen will list the motors that you have configured as well as a default gear ratio and stop delay. To calibrate your motors, press the RUN CAL button on the right side of the screen.

Motor Calibration			Home
Motor 1	Motor 2	Motor 3	Enter
Gear Ratio	Gear Ratio	Gear Ratio	Run Cal
2.340	--	--	More Motors
Stop Delay	Stop Delay	Stop Delay	
0.500	--	--	← Back

Drive Motor Setup (Continued)

Step 12: Prepare to Plant

In order to calibrate your motors, you will need to ensure that you have hydraulic pressure to your motor(s), seed (at least 200) in at least four rows for each motor (for example, if you have two motors, you will need seed in a total of eight rows, four rows for each motor), and vacuum on, if applicable. It is important to note that calibration must be done with a singulated crop, like corn. Results will be inaccurate with a non-singulated crop such as soybeans.

Motor Calibration	
Prepare to Plant - Hydraulic Pressure to Motor - Seed (200 seeds) in at least four (4) rows of each motor - Vacuum On (if applicable) Press to Continue NOTE: Calibration MUST be done with a Singulated crop (Corn) Results will be inaccurate with a non-Singulated crop (Soybeans)	Home
	Back

Step 13: Calibrating Motors

Before proceeding, ensure that the driveline is clear and that no one is working near the motors, driveline, or meters. To calibrate, lift and hold the Auto-Load switches as shown on the screen to start the process.

Motor Calibration	
WARNING: Motor will Turn! Ensure that the Driveline is Clear  Lift and Hold Auto-Load Switches to Start Process	Home
	Cancel
	Back

Step 14: Calibration Complete

Once calibration is complete, you will be shown the calibration values for each motor that is configured and the bottom of the screen will indicate that Calibration is Complete. If you have more than three motors (using a second RowFlow Module), press the MORE MOTORS button on the right side of the screen and repeat the process with those motors. Press ENTER when finished to return to the Drive Motor Setup screen.

Motor Calibration			
			Home
Motor 1	Motor 2	Motor 3	Enter
Gear Ratio	Gear Ratio	Gear Ratio	Run Cal
2.340	--	--	
Stop Delay	Stop Delay	Stop Delay	More Motors
0.500	--	--	
Calibration Complete			Back

Drive Motor Setup (Continued)

Step 15: Radar Calibration

To calibrate your radar, press the RADAR STATE button in the top right hand corner of the Drive Motor Setup screen. To calibrate the radar, you will need to be able to drive the tractor straight forward at a speed of 4mph or greater for up to 300 feet. You will need good GPS reception during the entire calibration. When ready, begin driving and press the black BEGIN CALIBRATION button in the middle of the screen.

Radar Calibration		Home
To calibrate the radar, the tractor must be driving straight forward at a constant speed of 4 mph or greater for about 300 ft. Good GPS Reception is required! Press to Begin Calibration Pulses per Foot 7.50		5.1 mph
		Enter
		Manual Value Entry
		Back

Step 16: Calibrating

While calibration is in process, you will be updated on your distance traveled at the bottom of the screen. If you need to cancel the calibration and start over, press the CANCEL button.

Radar Calibration		Home
Calibrating Touch to Cancel Distance Traveled 135.5 ft		5.1 mph
		Back

Step 17: Calibration Complete

When calibration is complete, your radar calibration, in pulses per foot, will be displayed. Press ENTER to return to the Drive Motor Setup screen. Your drive motors are now configured, calibrated, and ready for use.

Radar Calibration		Home
Calibration Complete Press to Re-Calibrate Pulses per Foot 26.71		Enter
		Manual Value Entry
		Back

Drive Motor Setup (Continued)

Serial Drive Motor Setup

The Drive Motor Setup screen includes all of the information related to configuring your drive motors. Up to three PWM Drive Motors can be configured OR two serial drive motors can be configured. For information on configuring PWM drive motors, see page 15. At this time, only Rawson serial drive motors with an AccuRate controller can be used.

Step 1: Control State

To begin drive motor setup, press the black SERIAL MOTOR 1 button and select ENABLED.

Serial Motor 1 Setup	
Control State	Home
	Enter
	Return to Motor Setup
	← Back
Enabled Disabled	

Step 2: Select Rows Driven by Motor

Next, select which planter rows will be driven by Serial Motor 1. This may be All, Odd, Even, Left, Right, or List. When selecting List, you will define which rows are not controlled by this motor by touching those row numbers so that they have an "X" over them. When done selecting rows, press ENTER.

Serial Motor 1 Setup	
Select Rows Driven by Motor	Home
	Enter
	Return to Motor Setup
	← Back
	All Odd Even
Left Right None	
List	

Step 3: Enter Base Population

Now, enter the base population that you selected on your Rawson AccuRate controller.

Serial Motor 1 Setup	
Enter Base Population	Home
	Enter
	Use Current Pop
	Return to Motor Setup
	← Back
	32000
	7 8 9 Back
4 5 6 -	
1 2 3 00	
0 . 000	

Drive Motor Setup (Continued)

Step 4: Select Incremental Change

Enter the incremental change that has been entered into your AccuRate controller – 2%, 4%, or 6.67%.

Serial Motor 1 Setup		
Select Incremental Change		
2%	4%	6.67%
Home Enter Return to Motor Setup Back		

Step 5: Confirm Configuration

Now confirm the configuration of Serial Motor 1 by reviewing the settings displayed on the Serial Motor 1 button.

Note: Repeat Steps 1 – 5 for any additional motors.

Drive Motor Setup			
Lift Switch	Primary Speed Source	Motor Calibration	Radar State
Uncalibrated	GPS	Uncalibrated	Uncalibrated
Drive Motor 1 Disabled	Drive Motor 2 Disabled		
Drive Motor 3 Disabled	Serial Motor 1 Rows	Serial Motor 2 Disabled	
	All		
	Base		
	32000		
Home Enter Up Arrow Down Arrow Back			

Step 6: Lift Switch Calibration

When controlling Rawson drives through an AccuRate controller, a lift switch is not needed in the RowFlow system. The lift switch in the Rawson system continues to provide information to the AccuRate controller for lift state.

Drive Motor Setup			
Lift Switch	Primary Speed Source	Motor Calibration	Radar State
Uncalibrated	GPS	Uncalibrated	Uncalibrated
Drive Motor 1 Disabled	Drive Motor 2 Disabled		
Drive Motor 3 Disabled	Serial Motor 1 Rows	Serial Motor 2 Disabled	
	All		
	Base		
	32000		
Home Enter Up Arrow Down Arrow Back			

Step 7: Primary Speed Source

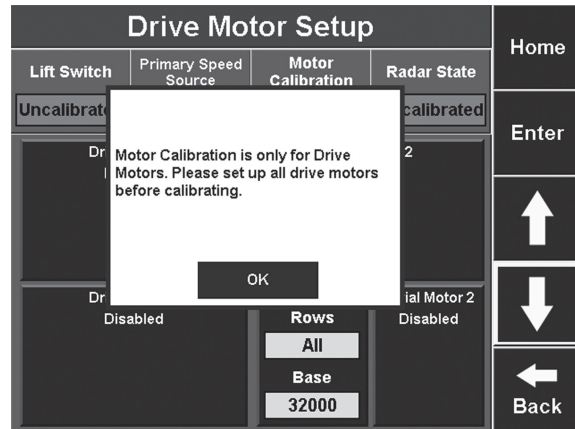
The second button at the top of the Drive Motor Setup page designates your primary speed source. This should be set to GPS. If it is not, press the button and select GPS.

Drive Motor Setup	
Primary Speed Source	
GPS	Radar
Home Enter Curve Adjust ON Back	

Drive Motor Setup (Continued)

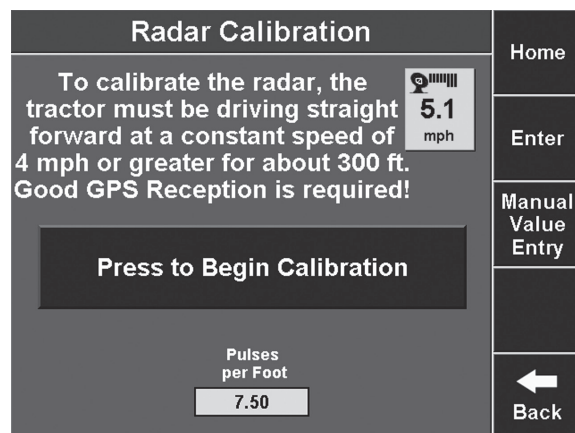
Step 8: Motor Calibration

When controlling Rawson drives through an AccuRate controller, calibration is done through the AccuRate.



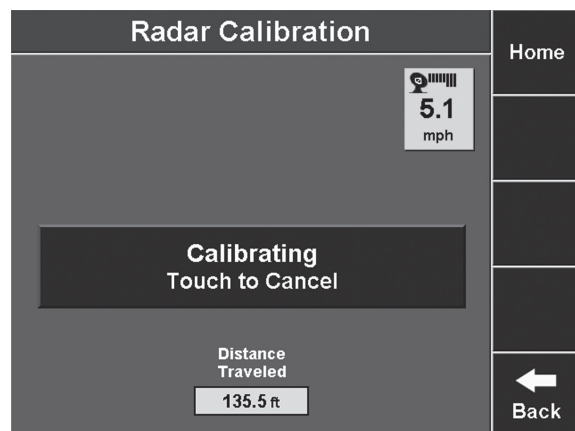
Step 9: Radar Calibration

To calibrate your radar, press the RADAR STATE button in the top right hand corner of the Drive Motor Setup screen. To calibrate the radar, you will need to be able to drive the tractor straight forward at a speed of 4mph or greater for up to 300 feet. You will need good GPS reception during the entire calibration. When ready, begin driving and press the black BEGIN CALIBRATION button in the middle of the screen.



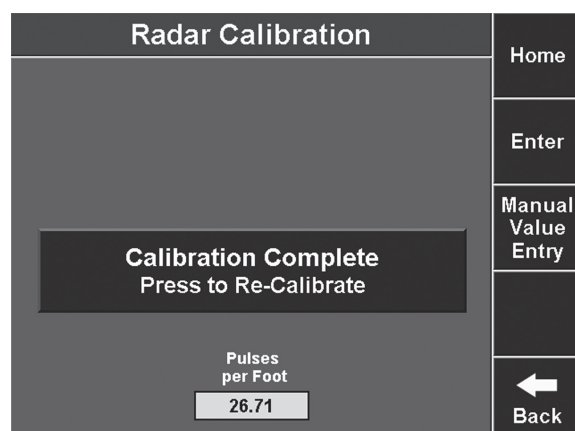
Step 10: Calibrating

While calibration is in process, you will be updated on your distance traveled at the bottom of the screen. If you need to cancel the calibration and start over, press the CANCEL button.



Step 11: Calibration Complete

When calibration is complete, your radar calibration, in pulses per foot, will be displayed. Press ENTER to return to the Drive Motor Setup screen. Your drive motors are now configured, calibrated, and ready for use.



Swath Configuration

The 20/20 RowFlow system can, with one RowFlow Module (RFM), control up to twenty-four (24) swath outputs. These outputs can control individual rows or combinations of rows depending on the type of clutches and other operational considerations. To control more than twenty-four swath outputs, a second RFM will be needed. To configure your swath sections, go to the RowFlow setup page. From the dashboard screen, press **SETUP**, then select the **SYSTEMS** tab, and then press the **ROWFLOW** button on the control side of the page. At the top of the RowFlow Setup screen, press the **SWATH CONFIGURATION** button.

Step 1: Control Style

To begin configuring your swath sections, you will need to select your control style. Press the **CONTROL STYLE** button in the top left corner of the Swath Section Setup Screen.

Swath Section Setup				Home
Control Style	Number of Sections	Calibration State	Coverage Pattern	
Disabled	2	Auto - On	0 Split	Enter
				↑
				↓
				← Back

Step 2: Swath Control Style

Now select the control style for your swath system. Choose from **DISABLED** if you want no swath control, **ROW CLUTCHES** if you have a clutch on each row, **DRIVELINE DISCONNECTS** if you have a half-width or other width disconnect on the driveline, or **HYDRAULIC DRIVE SHUT-OFF** if you will use your hydraulic drives for swath control. If you choose, hydraulic drive shut-offs, you will need to configure your drive motors before continuing to configure your swath control.

Swath Control Style		Home
Swath Control Style		Enter
Disabled	Row Clutches	↑
Driveline Disconnects	Hydraulic Drive Shut-off	↓
		← Back

Step 3a: Swath Clutch Style

If you select Row Clutches, you will then need to select the type of clutch that will be controlled. Choose **AIR CLUTCHES** for Tru-Count Pneumatic clutches. Choose one of the electric clutch options depending on the harness used. For harnesses from John Deere and Precision Planting as well as Ag Leader harnesses which provide single row control, select the larger black button on the right. An Ag Leader Dual Row Harness refers to a harness that controls pairs of rows across the planter. An Ag Leader Dual Ends Harness refers to a harness that controls the two rows on each end as a single unit but controls the other rows in between individually.

Swath Control Style		Home
Swath Clutch Style		Enter
Air Clutches Tru-Count Pneumatic	Electric Clutches Ag Leader Dual Row Harness	↑
Electric Clutches John Deere Harness Precision Planting Harness Ag Leader Single Row Harness	Electric Clutches Ag Leader Dual Ends Harness	↓
Electric Clutches Custom Setup		← Back

Swath Configuration (Continued)

Step 3b: Swath Disconnect Style

If you select Driveline Disconnects, you will need to select which type of harness you are using to control those disconnects. Determine whether you are using the 3 Output Harness (Precision Planting part number 727103) or the Relay Module Harness (Precision Planting part number 727115) and select the appropriate button.

Swath Control Style		Home
Swath Disconnect Style		Enter
3 Output Harness (#727103)	Relay Module Harness (#727115)	↑
		↓
		← Back

Step 4: Number of Sections

Now press the NUMBER OF SECTIONS button in the top row. Select the number of swath sections that you will be controlling. If you selected Hydraulic Drive Shutoffs as your control style, the number of sections will default to the number of configured drive motors and cannot be changed.

Swath Section Setup			Home
Number of Sections			Enter
2	3	4	↑
6	8	12	↓
16	24	32	← Back
36	Other		

Step 5: Assigning Rows to Sections

Now you will need to assign rows to sections. You may use the arrow to the left or right of number of rows to set the number of rows in that section. This will also begin to auto-fill row numbers in the "Rows in Section" column. If the row numbers assigned to the section are not correct, you may press the black box with the row numbers in it. This will bring up a list of all rows and you can select which rows are in this section by touching any rows not in the section so that they appear with an "X" over them.

Swath Section Setup				Home
Control Style	Number of Sections	Calibration State	Coverage Pattern	Enter
Elec-Std	8	Auto - On	0 Split	↑
Section Number	Number of Rows	Rows in Section	↓	← Back
1	< 2 >	1-2		
2	< 2 >	3-4		
3	< 1 >	5		
4	< 0 >			
5	< 0 >			

Step 6: Calibration State

Next, you will need to calibrate your swath control. Press the CALIBRATION STATE button at the top of the Swath Section Setup screen. On this screen, you can set the auto calibrate feature to "On" or "Off" by pressing the TIMING CALIBRATION STATE button. Leaving this "On" will allow the system to update the start and stop delays as you plant.

Swath Calibration			Home
Timing Calibration State			Enter
Auto Calibrate - On			Run Cal
Start Seeding Delay	Stop Seeding Delay	Stop Seeding Variation	Seeds / Disk
0.500 sec	0.500 sec	0.000 seeds	30
			← Back

Swath Configuration (Continued)

Step 7: Swath Calibration

To perform the initial calibration, press the RUN CAL button on the right side of the Swath Calibration screen. To calibrate, you will need to be planting: hex shaft turning and 300 seeds in at least four hoppers plus vacuum on and air tank for clutches filled if applicable. Press the PRESS TO CONTINUE button.

Swath Calibration	
Prepare to Plant - Hex Shaft Turning - Seeds (300 seeds) in at least four (4) hoppers - Vacuum (if applicable) - Air Tank Filled (if applicable) Press to Continue	Home
	← Back

Step 8: Swath Calibration

Before proceeding, ensure that the driveline is clear and that no one is working near the motors, driveline, or meters. To calibrate, lift and hold the Auto-Load switches as shown on the screen to start the process.

Swath Calibration	
WARNING: Motor will Turn! Ensure that the Driveline is Clear  Lift and Hold Auto-Load Switches to Start Process	Home
	Cancel
	← Back

Step 9: Calibration Complete

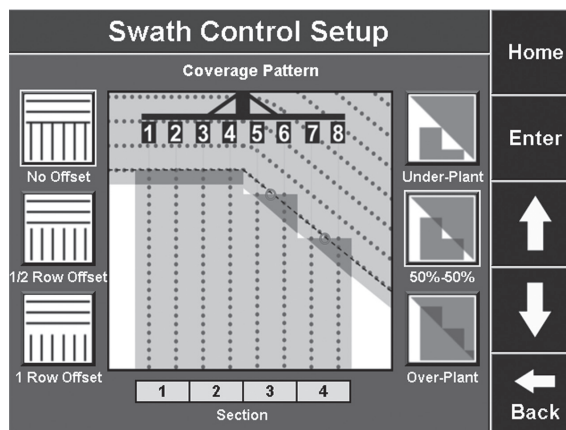
Once the calibration is complete, note the start and stop delays as well as the delay variation. Press ENTER when you are finished. Press ENTER again to return to the Swath Section Setup screen.

Swath Calibration										
Calibration Complete Press to Recalibrate <table><tr><td>Start Delay</td><td>Stop Delay</td><td>Stop Delay Variation</td></tr><tr><td>0.500</td><td>0.500</td><td>0.000</td></tr><tr><td>seconds</td><td>seconds</td><td>seeds</td></tr></table>	Start Delay	Stop Delay	Stop Delay Variation	0.500	0.500	0.000	seconds	seconds	seeds	Home
	Start Delay	Stop Delay	Stop Delay Variation							
	0.500	0.500	0.000							
	seconds	seconds	seeds							
	Enter									
	Seeds / Disk									
← Back										

Swath Configuration (Continued)

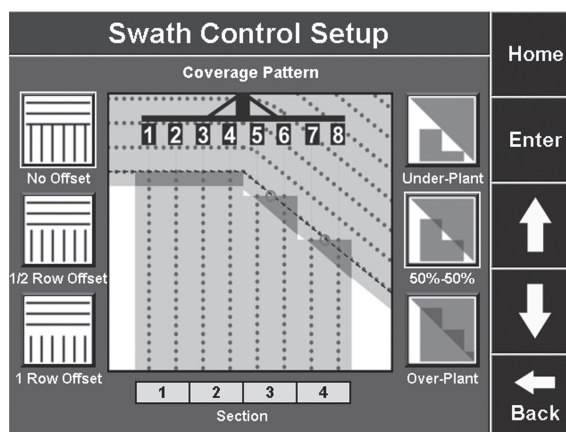
Step 10: Coverage Pattern - Offset

Finally, you will need to define your coverage pattern. This defines how you want the clutches to operate when entering and leaving already-planted areas. All Swath Control methods setups will require you to choose an offset from the left side of the screen. Choosing NO OFFSET directs the swath control to plant right up to the line of seeds previously planted. 1/2 ROW OFFSET will control clutches to plant to within a one-half row-width of the previously planted seeds. If you are using a 30" row planter, this will leave a 15" gap. Selecting 1 ROW OFFSET will leave a full row-width gap.



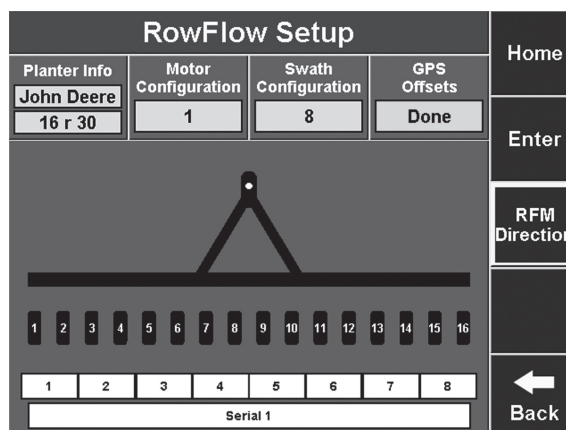
Step 11: Coverage Pattern – Under/Over Plant

If you are controlling individual rows, the selections on the right side will not be available. If, however, you are using individual row clutches but controlling them in multiple row sections, you will have to select one of the options on the right side of the screen. This determines when the multiple row section shuts off when it comes to the offset point chosen at left while at an angle. Choosing UNDERPLANT means that the section will shut off when the first row in the section hits the offset point. Choosing OVERPLANT will shut off the section when the last row in the section hits the offset point. Choosing 50%-50% means that the section will shut off when the middle of the section hits the offset point. Press ENTER when you are done.



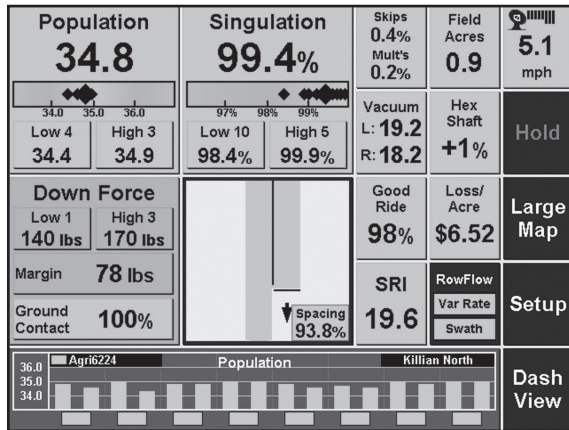
Step 12: Confirm Setup

Your Swath Sections are now configured. Press ENTER again to return to the RowFlow Setup screen. A diagram on this screen will show your planter as configured including which rows are controlled by which motors and swath sections. Verify that your setup is correct.

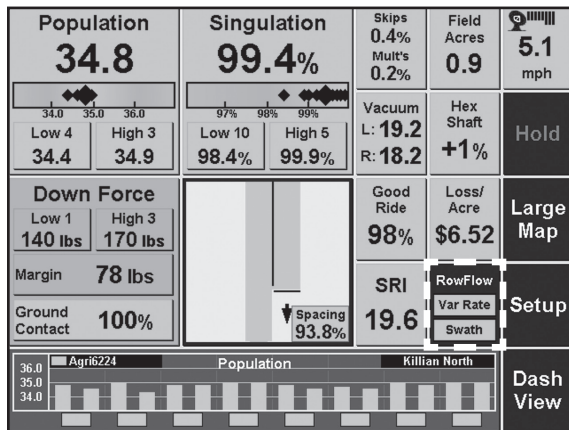


RowFlow Operations

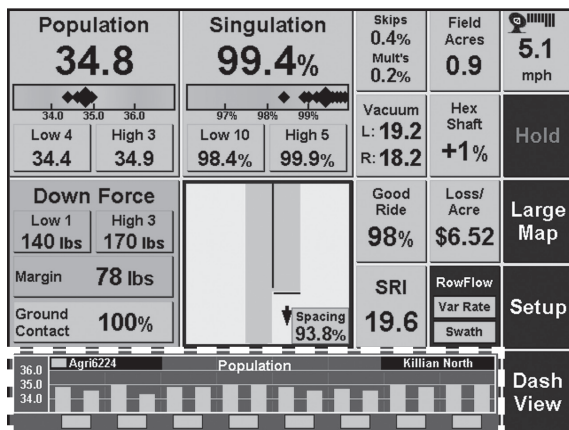
Dashboard Screen



The Variable Rate Seeding and Swath Control functions of 20/20 RowFlow are controlled through the 20/20 SeedSense monitor. When a RowFlow module is detected, a RowFlow button is automatically added to the dashboard screen to the left of the Setup button.



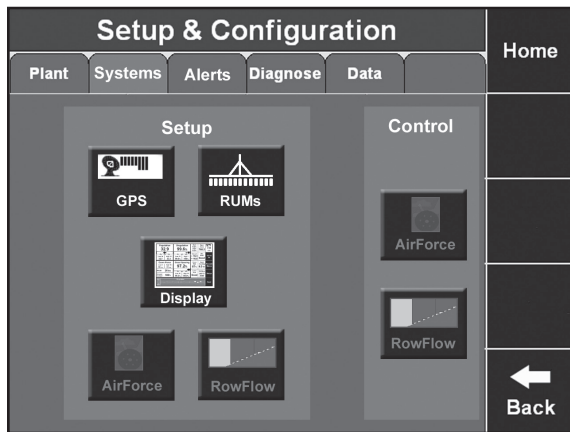
The RowFlow button displays the status of the two functions of RowFlow, Variable Rate and Swath Control. A green box indicates that the feature is detected and configured. A yellow box indicates that the feature is detected but not configured. A grey box indicates that the function is not detected. In addition to displaying status, pressing the **ROWFLOW** button takes you to the RowFlow control screen.



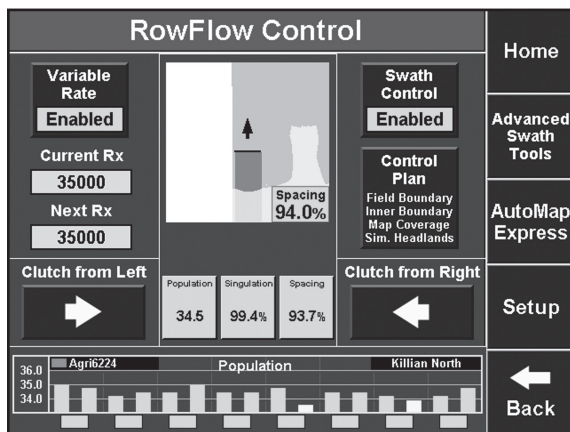
When the Swath Control function is active, the dashboard mini chart (DMC) shows which rows are tied together in common swath sections with a series of boxes below the population bars on the Population DMC. In this case, a 16 row planter is setup with eight 2-row sections.

RowFlow Operations (Continued)

RowFlow Control Screen

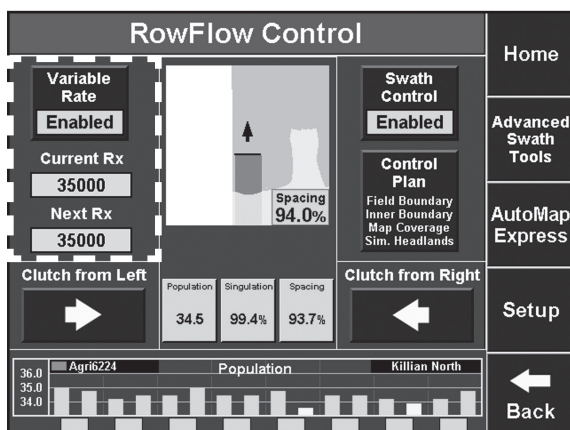


In addition to pressing the ROWFLOW button on the Dashboard screen, you can also access the RowFlow control screen by pressing SETUP on the Dashboard screen, then selecting the "Systems" tab, and then selecting the "RowFlow" button under "Control".



The RowFlow Control screen is the central location for all variable rate and swath control features in the SeedSense display. The center of the screen displays a coverage map with current population, singulation, and spacing values displayed below the map. The Population dashboard mini chart is displayed at the bottom of the screen for reference in both variable rate and swath control operations.

Variable Rate Control



Variable Rate control is located on the left side of the screen. The status button at the top indicates whether Variable Rate control is "Enabled" or "Manual". Pressing this button enables and disables Variable Rate control. Below the status button, the current population is displayed along with the next population in the prescription.

RowFlow Operations (Continued)

RowFlow Control				Home
Variable Rate Manual	Preset Populations		Swath Control Enabled	Advanced Swath Tools
+500 Adjust 32000 -500 Adjust	35000	0	Control Plan Field Boundary Inner Boundary Map Coverage Sim. Headlands	AutoMap Express
Clutch from Left ➡	0	0	Clutch from Right ⬅	Setup
0	0	0		Back
36.0 35.0 34.0 Agri6224 Population Killian North				

Pressing the VARIABLE RATE button switches the system to manual control. This ignores the prescription and continues to plant at the population being planted at the time the system disables. To control population again based on the variable rate prescription, press the VARIABLE RATE button. This returns the variable rate status to “Enabled”.

RowFlow Control				Home
Variable Rate Manual	Preset Populations		Swath Control Enabled	Advanced Swath Tools
+500 Adjust 32000 -500 Adjust	35000	0	Control Plan Field Boundary Inner Boundary Map Coverage Sim. Headlands	AutoMap Express
Clutch from Left ➡	0	0	Clutch from Right ⬅	Setup
0	0	0		Back
36.0 35.0 34.0 Agri6224 Population Killian North				

When variable rate control is in “Manual”, the planter continues to populate at the population being planted when it was disabled. To change populations manually, you can either select one of up to eight preset populations (set on the “Population” screen under the “Plant” tab) or you can adjust the population up or down in 500 seed increments using the arrows on the left side of the screen.

Display Settings				Home
Dashboard Buttons	Sound Settings	Date/ Time	Dashboard Minichart Auto Scroll	Enter
Screen Brightness 100%	Row Failure Jump to Row	Down Force Mode Low High	Units English	Display Mode P. Demo
Field Summary Disabled	Quick Adjust Population 500	Quad Map Zoom 100%		Field Summary
Calibrate Touch Screen	Reboot Display Unit		Advanced Setup	Back

To change the value in the population adjust buttons, select the DISPLAY button under the SYSTEMS tab. Press the QUICK ADJUST button and select new value.

RowFlow Operations (Continued)

Loading a Prescription

Variable Rate Seeding Prescriptions for 20/20 RowFlow can be generated in many computer programs including AutoMap from Precision Planting, MapShots EasiSuite, FarmWorks, AgLeader SMS, APEX, and other programs that can export a prescription as a shape file. At this time, only variable rate seeding prescriptions are supported by 20/20 RowFlow. Many prescriptions may be stored in the memory of the Display Unit. Each field can have one active prescription at a time. Prescriptions may also be created using AutoMap Express in the SeedSense display. Instructions for using AutoMap Express begin on page 32 of this manual.

Data Import						Home
Plant	Systems	Alerts	Diagnose	Data	Map	
Planting Config Read Planter, Field, Crop, and Seed Configurations			System Config Read Display, Sound, and Down Force Settings			Enter
Field Map Data Read Planting Field Map Data for use in Harvest Replay			Prescrip/Boundary Read Prescriptions and Boundary Files			↑
Swath Coverage Map Read Swath Coverage Map from another 20/20 System.						↓
						← Back

To Import prescription files into the SeedSense display unit, load the files onto a USB flash drive and insert the drive into the display unit. From the dashboard screen select SETUP, then the DATA tab, and then IMPORT. On the Data Import screen, press PRESCRIP/BOUNDARY. This will import both prescription and boundary files into the display unit.

Field Setup			Home
Client / Farm Henri, Joel Horseshoe Farms	Field Name Millys North 40	Entrance 0.00000 0.00000	Enter
Field Number 40	Tillage	Field Acres 0.0	
		Prescription Headland Pop	Delete Field
		1 Demo Pop	Delete Coverage Map
		2 Demo Pop	

		Boundary File	← Back

To load a prescription file for a particular field, go to the Field Setup screen for that field. To get to the Field Setup screen from the dashboard, press SETUP, then the FIELD button, and then select the appropriate field. Press the PRESCRIPTION button near the bottom right of the screen.

RowFlow Operations (Continued)

Field Setup	
Select Prescription File	Home
None	Enter
Headland Pop	↑ ↓ ←
RowFlow Demo Boundary	
RowFlow Demo Pop	
RowFlow Test Boundary	
RowFlow Test Population.xml	Back

Select the prescription that you would like to load for this field from the list. You may need to use the up and down arrows on the right side of the screen to scroll through the list to find the desired prescription.

Field Setup	
Select Prescription Attribute	Home
population	Enter
	↑ ↓ ←
	Back
	Single Attribute Specific Attribute per Motor

Next, select SINGLE ATTRIBUTE or SPECIFIC ATTRIBUTE PER MOTOR at the bottom of the screen, select the desired attribute, and press ENTER. Repeat if applying specific attributes per motor.

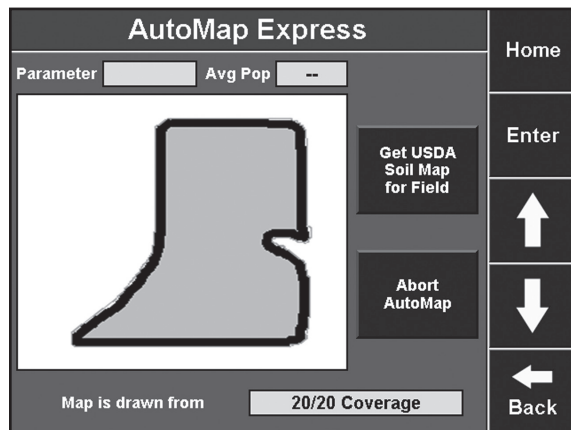
Field Setup			Home
Client / Farm	Field Name	Entrance	Enter
Henri, Joel	Millys North 40	0.00000 0.00000	
Horseshoe Farms			Delete Field
Field Number	Tillage	Field Acres	
40		0.0	Delete Coverage Map
		Prescription	
		Headland Pop	Back
		1 Demo Pop	
		2 Demo Pop	
		Boundary File	

Once you have selected the prescription, verify on the Field Setup screen that the correct prescription is loaded by looking at both the PRESCRIPTION button and the picture of the field to the left.

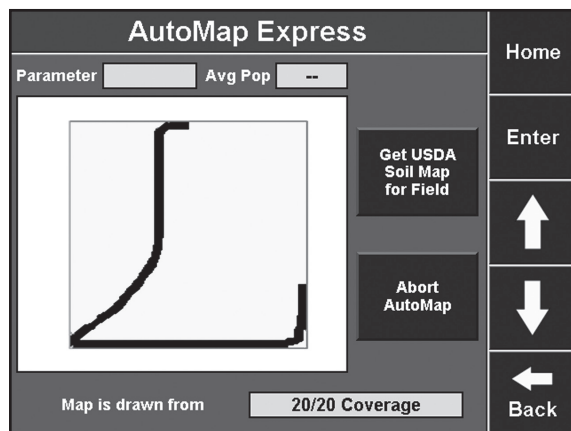
RowFlow Operations (Continued)

AutoMap Express

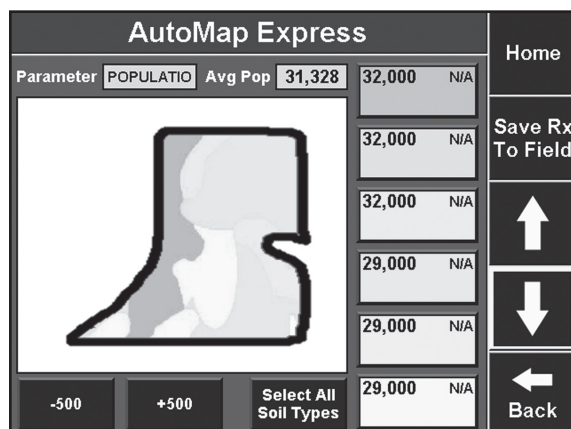
AutoMap Express is a feature within the 20/20 display unit that allows you to generate variable rate seeding prescriptions while in the field. To use AutoMap express, you will need to plant around the outside edge of your field or have an RTK-quality boundary. Either of these will allow AutoMap Express to load the USDA soil map data for the field and generate a field map.



To enter AutoMap Express, go to the RowFlow control page and press the “AutoMap Express” button on the right side of the screen. Once you have planted a pass around the outside of your fields (or loaded a boundary map) you will see the closed field map on your screen. Once you have a closed field map, insert a USB drive with the data needed and press “Get USDA Soil Map for Field”.



You may also choose to get the “USDA Soil Map for Field” before you have closed coverage. If you do, it will generate a map based on the farthest extents of the area you have planted.



Once the soil map loads (this process may take up to two minutes), you will be able to see the different soil types both on the map and on the corresponding colored buttons on the right. The name of the soil type will be displayed below the population on each soil type button. The number displayed is the CPI (Crop Productivity Index).

RowFlow Operations (Continued)

AutoMap Express

Parameter **POPULATIO** Avg Pop **31,328**

32,000 N/A

32,000 N/A

32,000 N/A

29,000 N/A

29,000 N/A

29,000 N/A

Home

Save Rx To Field

↑

↓

← Back

-500 +500 Select All Soil Types



To set a population for a particular soil type, press the soil type button and it will be highlighted in yellow. Adjust the population up or down from the base population in 500 seed increments using the arrows at the bottom left hand side of the screen. As you adjust the population of a soil type, the average population value at the top of the screen increases or decreases to reflect the changes.

AutoMap Express

Parameter **POPULATIO** Avg Pop **31,328**

32,000 N/A

32,000 N/A

32,000 N/A

29,000 N/A

29,000 N/A

29,000 N/A

Home

Save Rx To Field

↑

↓

← Back

-500 +500 Unselect All Types



To adjust the target population of all soil types together, press the “Select All Soil Types” button. All soil types will now be highlighted. You can now adjust the target populations of all soil types at the same time using the arrows at the bottom left of the screen.

Display Settings

Home

Dashboard Buttons	Sound Settings	Date/ Time	Dashboard Minichart Auto Scroll	Enter
Screen Brightness 100%	Row Failure Jump to Row	Down Force Mode Low High	Units English	Display Mode P. Demo
Field Summary Disabled	Quick Adjust Population 500	Quad Map Zoom 100%		Field Summary
Calibrate Touch Screen	Reboot Display Unit		Advanced Setup	← Back

To change the value in the population adjust button, select the **DISPLAY** button unt the **SYSTEMS** tab. Press the **QUICK ADJUST POPULATION** button and select a new value.

AutoMap Express

Parameter **POPULATIO** Avg Pop **31,328**

32,000 N/A

32,000 N/A

32,000 N/A

29,000 N/A

29,000 N/A

29,000 N/A

Home

Save Rx To Field

↑

↓

← Back

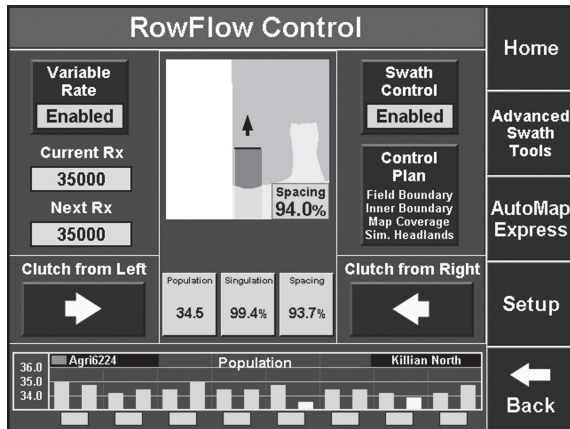
-500 +500 Select All Soil Types



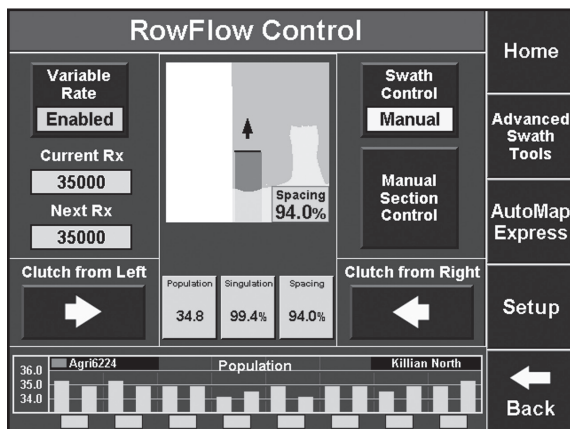
Once you have set the populations of each soil type, press the “Save Rx to Field” button on the right side of the screen. This saves the prescription to the active field and takes you to the Field Setup screen. You are now ready to continue planting the field.

RowFlow Operations (Continued)

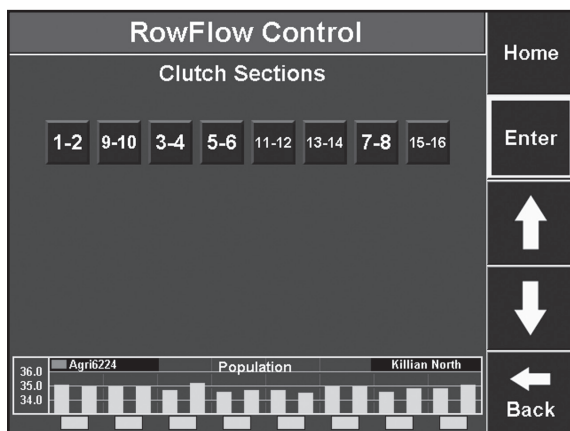
Swath Control



Swath Control is located on the right side and lower part of the screen. The status button at the top indicates whether Swath Control is “Enabled” or “Manual”. Pressing this button enables and disables Swath Control. Swath Control switches to manual when you press the status button or when you press one of the arrow buttons at the bottom of the screen.

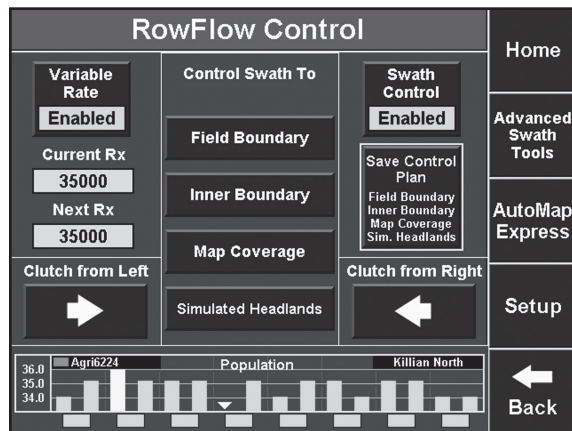


Once Swath Control is in manual mode, you now have two methods for manual control. If you want to shut off sections beginning on one end of the planter and moving across, press the arrow under either “Clutch from Right” or “Clutch from Left”. Each time you press an arrow it will shut off or turn on one section. You may also select “Manual Section Control”.

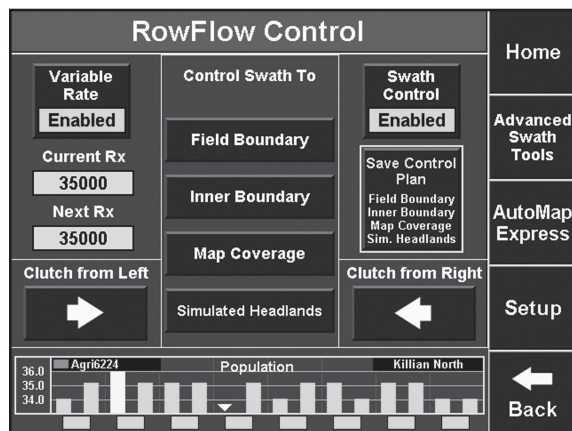


When you press MANUAL SECTION CONTROL, a new screen will display with your clutch sections. Press a section to shut it off. The text on the button will turn grey with an X on it to indicate that it is shut off. Press the down arrow to get to other sections.

RowFlow Operations (Continued)

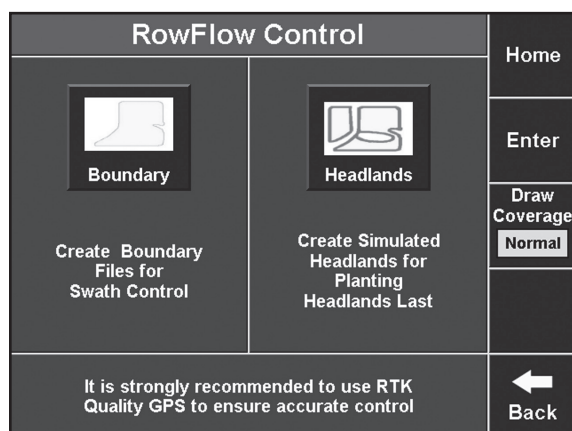


The “Control Plan” button allows you to define the features to which your clutches respond. There are four options. You can control to all four, to only one, or to any combination of the four. Pressing one of the options in the center of the screen will disable it as a control feature. The title will turn grey with a line through it. Once you have selected your control plan, press the “Save Control Plan” button.



There are four features to which Swath Control will respond. Selecting “Field Boundary” or “Inner Boundary” indicates that you want your sections to shut off when outside of the field boundary or inside an inner boundary. Selecting “Map Coverage” indicates that you want the clutches to shut off when crossing into an already planted area. Selecting “Simulated Headlands” controls clutches to an offset from your field boundaries to enable headlands to be planted last.

Boundaries and Simulated Headlands



Pressing the “Advanced Swath Control” button on the RowFlow Control screen gives access to two Advanced Swath Tools. These tools should only be used with RTK quality GPS to ensure accurate performance. Using poorer quality GPS can result in drifting boundaries and inaccurate clutch control.

RowFlow Operations (Continued)

Record Swath Boundaries		Home
Field Name: Killian North	Status: READY	Enter Setup Offset 0.0 ft -> Change Field Back
	RECORD Field Boundary	
	RECORD Inner Boundary	
	PAUSE	
	CANCEL Recording	
Filename: Killian_North_B01		Back

Pressing the BOUNDARY button takes you to the Record Swath Boundaries screen. Boundaries recorded are for Swath Control only. They do not play a role in variable rate seeding except that they can be used in AutoMap Express to generate a soil map.

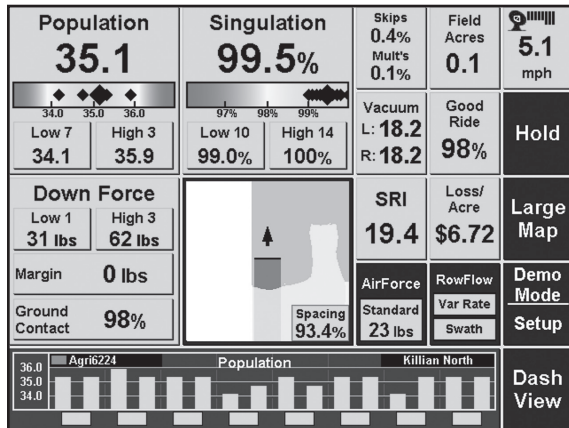
Record Swath Boundaries		Home												
	Offset distance is measured from GPS Unit to boundary line.	Enter Up Arrow Down Arrow Back												
Recording Offset (ft) Flip 20	<table border="1"> <tr><td>7</td><td>8</td><td>9</td></tr> <tr><td>4</td><td>5</td><td>6</td></tr> <tr><td>1</td><td>2</td><td>3</td></tr> <tr><td>0</td><td>.</td><td>C</td></tr> </table>		7	8	9	4	5	6	1	2	3	0	.	C
7	8		9											
4	5		6											
1	2		3											
0	.	C												

Before recording a boundary, you will need to enter a Recording Offset Point. Press the SETUP OFFSET button on the Record Swath Boundaries page (see above). Now, enter the distance from the GPS unit to where you would like the boundary line to be recorded. If the you are recording to the opposite side of the vehicle, press the FLIP button. When done, press ENTER to return to the recording screen.

Record Swath Boundaries		Home
Field Name: Killian North	Status: RECORDING	Enter Setup Offset 0.0 ft -> Change Field Back
	END Field Boundary	
	RECORD Inner Boundary	
	PAUSE	
	CANCEL Recording	
Filename: Killian_North_B01		Back

To begin recording, press the RECORD FIELD BOUNDARY button (see above). As you drive the boundary, it will be displayed on the screen. Press the PAUSE button to pause recording (such as when turning a corner) and CANCEL to cancel the recording. If you are planting while recording, you may press HOME to see the dashboard screen.

RowFlow Operations (Continued)



Pressing the BOUNDARY button takes you to the Record Swath Boundaries screen. Boundaries recorded are for Swath Control only. They do not play a role in variable rate seeding except that they can be used in AutoMap Express to generate a soil map.

Record Swath Boundaries

Offset distance is measured from GPS Unit to boundary line.

Recording Offset (ft): 20

Flip

7 8 9
4 5 6
1 2 3
0 . C

Home
Enter
Up Arrow
Down Arrow
Left Arrow
Back

Before recording a boundary, you will need to enter a Recording Offset Point. Press the SETUP OFFSET button on the Record Swath Boundaries page (see above). Now, enter the distance from the GPS unit to where you would like the boundary line to be recorded. If the you are recording to the opposite side of the vehicle, press the FLIP button. When done, press ENTER to return to the recording screen.

Record Swath Boundaries

Field Name: Killian North

Status: RECORDING

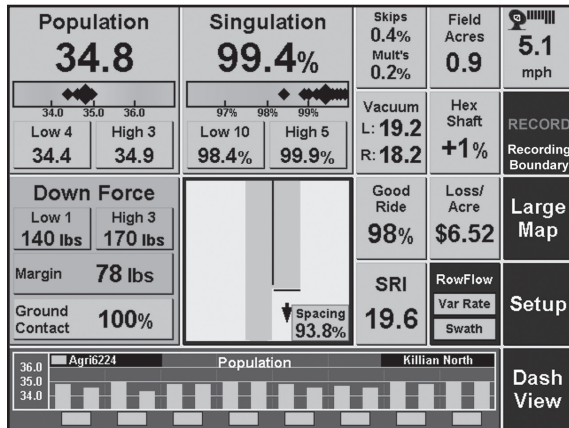
END Field Boundary
RECORD Inner Boundary
PAUSE
CANCEL Recording

Filename: Killian_North_B01

Home
Enter
Setup Offset
0.0 ft ->
Change Field
Back

To begin recording, press the RECORD FIELD BOUNDARY button (see above). As you drive the boundary, it will be displayed on the screen. Press the PAUSE button to pause recording (such as when turning a corner) and CANCEL to cancel the recording. If you are planting while recording, you may press HOME to see the dashboard screen.

RowFlow Operations (Continued)



If planting while recording a boundary, the black button below the speed indicator will indicate your recording status. Pressing this button will return you to the Record Swath Boundaries screen.

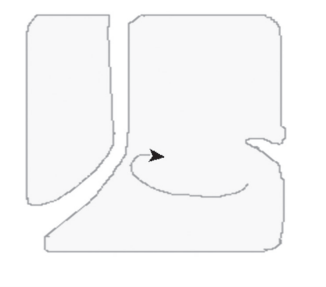
Record Swath Boundaries		Home
Field Name: Killian North	Status: READY	Enter
	RECORD Field Boundary	Setup Offset 0.0 ft ->
	RECORD Inner Boundary	Change Field
	PAUSE	Back
	CANCEL Recording	
Filename: Killian_North_B01		

Once your boundary comes within one offset-width of the starting point, you will be prompted to either close the boundary or continue recording. This completes the recording of the field boundary.

Record Swath Boundaries		Home
Field Name: Killian North	Status: RECORDING	Enter
	END Field Boundary	Setup Offset 0.0 ft ->
	RECORD Inner Boundary	Change Field
	PAUSE	Back
	CANCEL Recording	
Filename: Killian_North_B01		

You may now choose to record an additional Field Boundary using the same process. This must be a boundary applying to the same field.

RowFlow Operations (Continued)

Record Swath Boundaries		Home
Field Name: Killian North	Status: PAUSED	Enter Setup Offset 0.0 ft -> Change Field Back
	RECORD Field Boundary	
	END Inner Boundary	
	RESUME	
	CANCEL Recording	
Filename: Killian_North_B01		

Once a Field Boundary is complete, you may record inner boundaries within the field to designate no-plant areas. Press the RECORD INNER BOUNDARY button to begin and END INNER BOUNDARY to complete the boundary. You may pause or cancel this recording if needed. When you press PAUSE that button will become RESUME.

Record Swath Boundaries		Home
Field Name: Killian North	Status: READY	Enter Setup Offset 0.0 ft -> Change Field Back
	RECORD Field Boundary	
	RECORD Inner Boundary	
	PAUSE	
	CANCEL Recording	
Filename: Killian_North_B01		

As you record the boundary, it is automatically recorded in the list of boundary files unless you press CANCEL RECORDING before it is complete. When you have finished a set of boundaries for a field, you may press HOME or BACK to leave this page.

Creating Simulated Headlands

Simulated Headlands		Home
Field Name: Killian North	Headland Width 40.0 ft	Enter Back
	CREATE Field Boundary Headland	
	CREATE Inner Boundary Headland	

Pressing the HEADLANDS button on the Advanced Swath Tools page brings you to the Simulated Headlands screen. If you wish to plant your headlands last, you can use this feature to offset your field boundary, generating simulated headlands where your clutches will turn off as though you had already planted there.

RowFlow Operations (Continued)

Simulated Headlands		Home
Field Name: Killian North	Headland Width 40.0 ft	Enter
	REMOVE Field Boundary Headland	
	REMOVE Inner Boundary Headland	
		Back

To create a simulated headland, you first need to designate the width of the headland you would like to create. Press the HEADLAND WIDTH button and enter the desired width, in feet. Now, you can press the CREATE FIELD BOUNDARY HEADLAND and/or the CREATE INNER BOUNDARY HEADLAND buttons to create a simulated headlands. To remove the simulated headlands, press the buttons which are now labeled REMOVE.

Loading a Field Boundary

Swath boundaries for 20/20 RowFlow can be generated in many computer programs including MapShots EasiSuite, FarmWorks, AgLeader SMS, APEX, and other programs that can export a boundary as a shape file. Many boundary files may be stored in the memory of the Display Unit. Each field can have only one active boundary at a time. Boundaries may also be created using the Record Boundary feature in the SeedSense display unit as described in the preceding pages.

Data Import				Home	
Plant	Systems	Alerts	Diagnose	Data	Map
Planting Config Read Planter, Field, Crop, and Seed Configurations		System Config Read Display, Sound, and Down Force Settings		Enter	
Field Map Data Read Planting Field Map Data for use in Harvest Replay		Prescrip/Boundary Read Prescriptions and Boundary Files		↑	
Swath Coverage Map Read Swath Coverage Map from another 20/20 System.				↓	
				←	Back

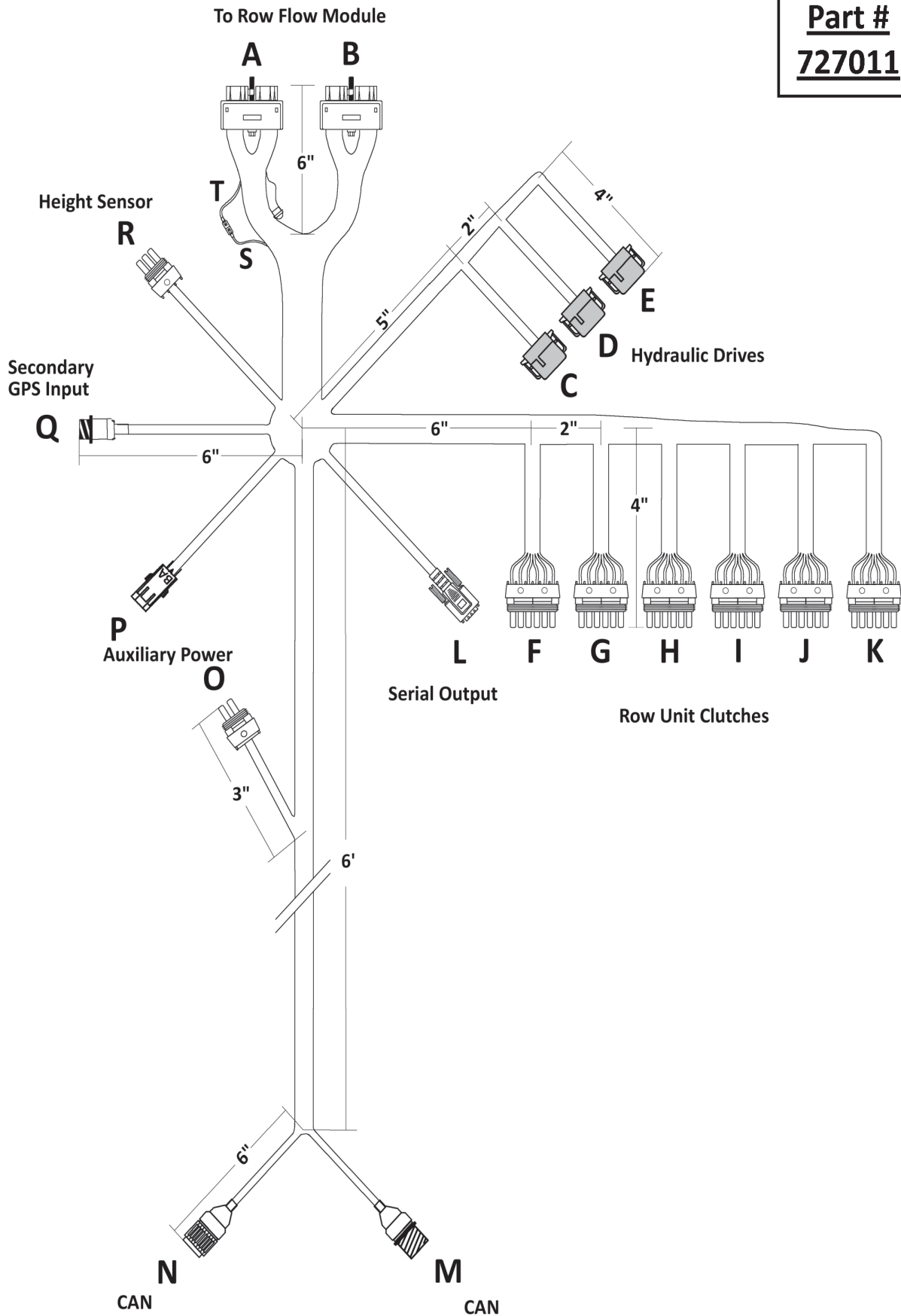
To Import boundary files into the SeedSense display unit, load the files onto a USB flash drive and insert the drive into the display unit. From the dashboard screen select SETUP, then the DATA tab, and then IMPORT. On the Data Import screen, press PRESCRIP/BOUNDARY. This will import both prescription and boundary files into the display unit.

Field Setup			Home
Client / Farm Henri, Joel Horseshoe Farms	Field Name Millys North 40	Entrance 0.00000 0.00000	
Field Number 40	Tillage	Field Acres 0.0	Enter
		Prescription Headland Pop	Delete Field
		1 Demo Pop	Delete Coverage Map
		2 Demo Pop	
		Boundary File	Back

To load a boundary file for a particular field, go to the Field Setup screen for that field. To get to the Field Setup screen from the dashboard, press SETUP, then the FIELD button, and then select the appropriate field. Press the BOUNDARY FILE button near the bottom right of the screen.

Row Flow Base Harness

Part #
727011



Row Flow Base Harness Continued

Part #
727011

A - Cinch Plug

From	Function	To
(A) L1	Power +5V	LED (+),Q4
(A) L2	LED	LED (-)
(A) L3	Power +12V	M7,M9,N7,N9,OA
(A) M1	Not Used Plug	--
(A) M2	Not Used Plug	--
(A) M3	Analog Ground	C4,D4,E4,R2
(A) N1	RX from GPS	Q2
(A) N2	TX to Rawson	(L) L2
(A) N3	RX from Rawson	(L) L3
(A) P1	TX to GPS	Q3
(A) P2	CAN A HI	M6,N6
(A) P3	CAN A LO	M2,N2
(A) R1	CAN B HI	M8,N8
(A) R2	CAN B LO	M4,N4
(A) R3	CAN SHIELD	M5,N5
(A) S1	Height Signal	R1
(A) S2	Not Used Plug	--
(A) S3	Not Used Plug	--
(A) T1	Not Used Plug	--
(A) T2	Battery Ground	C7,D7,E7,FA,GA,HA,IA
(A) T3	Not Used Plug	--
(A) W1	Speed Signal 2	D3
(A) W2	Speed Signal 1	C3
(A) W3	Speed Signal 3	E3
(A) X1	Pressure Signal 3	E5
(A) X2	Pressure Signal 1	C5
(A) X3	Harness ID	T
(A) Y1	Pressure Signal 2	D5
(A) Y2	Temperature Signal	C6
(A) Y3	Ground	L5,M1,M3,N1,N3,OB,

B - Cinch Plug

From	Function	To
(B) A1	Battery +12V	PA
(B) A2	Swath 16	IE
(B) A3	VRD 3	E2
B1	Swath 06	GC
B2	Swath 22	KC
B3	Swath 13	IB
(B) C1	VRD 1	C2
(B) C2	Swath 15	ID
(B) C3	Swath 21	KB
(B) D1	Swath 08	GE
(B) D2	Swath 05	GB
(B) D3	Swath 20	JE
(B) E1	Swath 24	KE
(B) E2	Swath 14	IC
(B) E3	Swath 07	GD
(B) F1	Swath 04	FE
(B) F2	Swath 12	HE
(B) F3	Protected +12V	C1,D1,E1,R3
(B) G1	Swath 19	JD
(B) G2	Swath 11	HD
(B) G3	Swath 03	FD
(B) H1	VRD 2	D2
(B) H2	Swath 18	JC
(B) H3	Swath 10	HC
(B) J1	Swath 02	FC
(B) J2	Swath 23	KD
(B) J3	Swath 01	FB
(B) K1	Battery +12V	PA
(B) K2	Swath 17	JB
(B) K3	Swath 09	HB

C - Deutsch 8 pin Receptacle

From	Function	To
C1	Sensor Power +12V	(B) F3, D1, E1
C2	Valve Power +12V	(B) C1
C3	Speed Sensor Signal	(A) W2
C4*	Sensor Ground	(A) M3,D4,E4,R2
C5	Pressure Signal	(A) X2
C6	Temperature Signal	(A) Y2
C7	Valve Ground	(A) T2, D7,E7,FA,GA,HA,IA,JA,KA,PB
C8	Not Used Plug	--

Row Flow Base Harness Continued

Part #
727011

D - Deutsch 8 pin Receptacle

From	Function	To
D1	Sensor Power +12V	(B) F3, C1, E1
D2	Valve Power +12V	(B) H1
D3	Speed Sensor Signal	(A) W1
D4*	Sensor Ground	(A) M3, C4,E4,R2
D5	Pressure Signal	(A) Y1
D6	Temperature Signal	
D7	Valve Ground	(A) T2, C7,E7,FA,GA,HA,I
D8	Not Used Plug	--

E - Deutsch 8 pin Receptacle

From	Function	To
E1	Sensor Power +12V	(B) F3, C1, D1
E2	Valve Power +12V	(B) A3
E3	Speed Sensor Signal	(A) W3
E4*	Sensor Ground	(A) M3, C4,D4,R2
E5	Pressure Signal	(A) X1
E6	Temperature Signal	
E7	Valve Ground	(A) T2, C7,D7,FA,GA,HA,I
E8	Not Used Plug	--

F - Weatherpack 6 pin Plug

From	Function	To
FA	Ground	(A) T2, C7,D7,E7,GA,HA,IA,
FB	Output 1	(B) J3
FC	Output 2	(B) J1
FD	Output 3	(B) G3
FE	Output 4	(B) F1
FF	Not Used Plug	--

G - Weatherpack 6 pin Plug

From	Function	To
GA	Ground	(A) T2, C7,D7,E7,FA,HA,I
GB	Output 1	(B) D2
GC	Output 2	(B) B1
GD	Output 3	(B) E3
GE	Output 4	(B) D1
GF	Not Used Plug	--

H - Weatherpack 6 pin Plug

From	Function	To
HA	Ground	(A) T2, C7,D7,E7,FA,GA,IA,J
HB	Output 1	(B) K3
HC	Output 2	(B) H3
HD	Output 3	(B) G2
HE	Output 4	(B) F2
HF	Not Used Plug	--

I - Weatherpack 6 pin Plug

From	Function	To
IA	Ground	(A) T2, C7,D7,E7,FA,GA,
IB	Output 1	(B) B3
IC	Output 2	(B) E2
ID	Output 3	(B) C2
IE	Output 4	(B) A2
IF	Not Used Plug	--

J - Weatherpack 6 pin Plug

From	Function	To
JA	Ground	(A) T2, C7,D7,E7,FA,GA,HA, IA,KA,PB
JB	Output 1	(B) K2
JC	Output 2	(B) H2
JD	Output 3	(B) G1
JE	Output 4	(B) D3
JF	Not Used Plug	--

K - Weatherpack 6 pin Plug

From	Function	To
KA	Ground	(A) T2, C7,D7,E7,FA,GA,
KB	Output 1	(B) C3
KC	Output 2	(B) B2
KD	Output 3	(B) J2
KE	Output 4	(B) E1
KF	Not Used Plug	--

Row Flow Base Harness Continued

Part #
727011

L - DSUB 9 pin Female

From	Function	To
1	Not Used	--
2	TX	(A) N2
3	RX	(A) N3
4	Not Used	--
5*	Ground	(A) Y3,M1,M3, N1,N3,OB,Q1,S
6	Not Used	--
7	Not Used	--
8	Not Used	--
9	Not Used	--

M - Amp 9 pin Receptacle

From	Function	To
1	Ground	(A) Y3, L5,M3,N1, N3,OB,Q1,S
2	CAN A LO	(A) P3, N2
3	Ground	(A) Y3, L5,M1,N1, N3,OB,Q1,S
4	CAN B LO	(A) R2, N4
5	CAN Shield	(A) R3, N5
6	CAN A HI	(A) P2, N6
7	Power +12V	(A) L3, M9,N7,N9,OA
8	CAN B HI	(A) R1, N8
9	Power +12V	(A) L3,M7,N7,N9OA

N - Amp 9 pin Plug

From	Function	To
1	Ground	(A) Y3,L5,M1,
2	CAN A LO	(A) P3, M2
3	Ground	(A) Y3,L5,M1,
4	CAN B LO	(A) R2, M4
5	CAN Shield	(A) R3, N5
6	CAN A HI	(A) P2, M6
7	Power +12V	(A) L3, M7,M9,N9,OA
8	CAN B HI	(A) R1, N8
9	Power +12V	(A) L3, M7,M9,N7,OA

O - Weatherpack 2 pin Plug

From	Function	To
OA	Power +12V	(A) L3, M7,M9,N7,N9
OB	Ground	(A) Y3, L5,M1,M3,N1,N3,Q1,S

P - Weatherpack 2 pin Plug

From	Function	To
PA	Power +12V	(B) K1, (B) A1
PB	Ground	(A) T2,C7,D7,E7,

Q - Amp 4 pin Receptacle

From	Function	To
1*	Ground	(A) Y3,L5,M1, M3,N1,N3,OB,S
2	RX from GPS	(A) N1
3	TX to GPS	(A) P1
4	Power +5V	(A) L1, LED(+)

R - Weatherpack 3 pin Plug

From	Function	To
1	Signal	(A)S1
2*	Ground	(A)M3, C4,D4,E4
3	Power +12V	(B)F3, C1,D1,E1

S - Panduit Female Disconnect

From	Function	To
S	Signal	(A) Y3,L5,M1, M3,N1,N3,OB,Q1

T - Panduit Male Disconnect

From	Function	To
T	Signal	(A) X3

Hemisphere GPS Adapter Harness Cable

Part #
727027

A - DEUTSCH - 12 pin Plug

Pin No.	Function	To
1	Not Used	--
2	TX B	D2
3	RX B	D3
4	Not Used	--
5	Signal Ground	B1, D5
6	TX A	B2
7	Not Used	--
8	RX A	B3
9	Not Used	--
10	12V Power	CA
11	12V Ground	CB
12	Speed Out	--

D - DSUB - 9 pin Female (Serial)

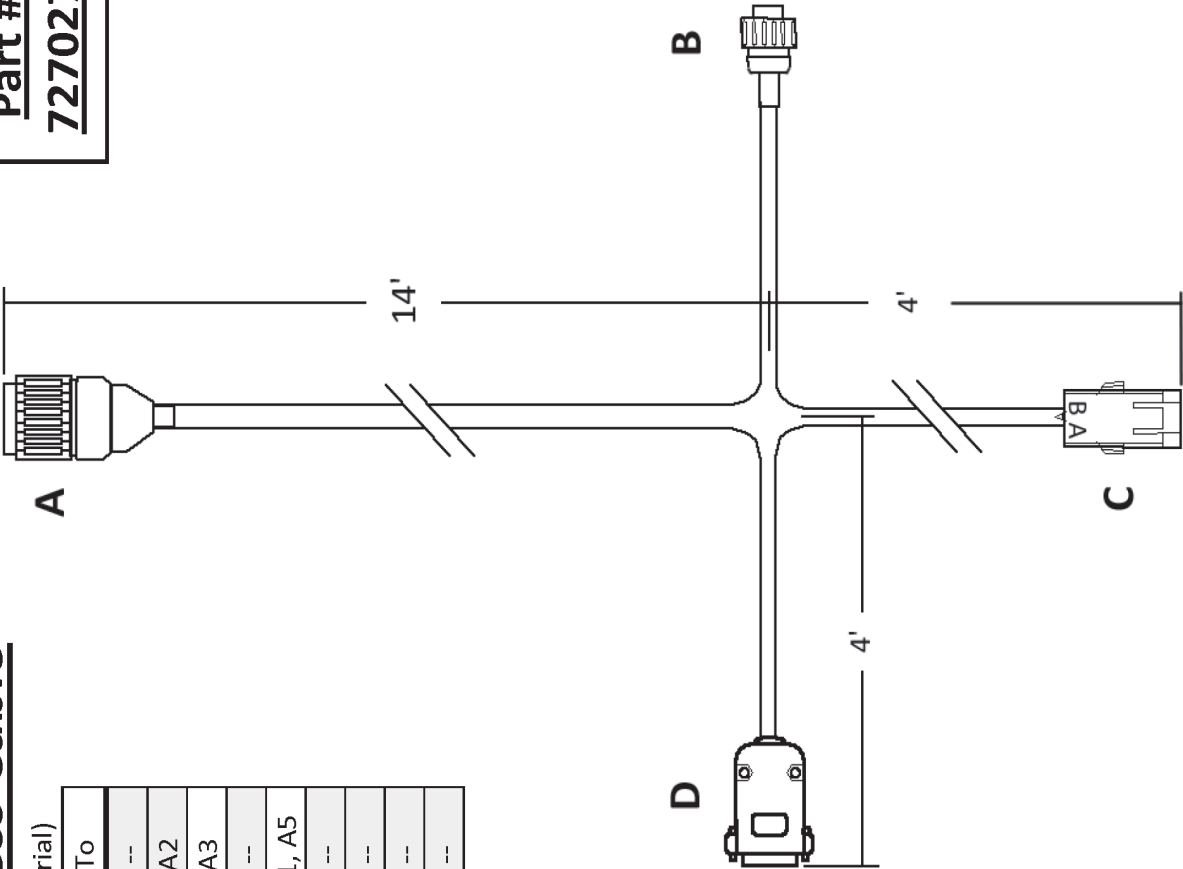
Pin No.	Function	To
1	Not Used	--
2	TX B	A2
3	RX B	A3
4	Not Used	--
5	Signal Ground	B1, A5
6	Not Used	--
7	Not Used	--
8	Not Used	--
9	Not Used	--

B - AMP - 4 pin Plug

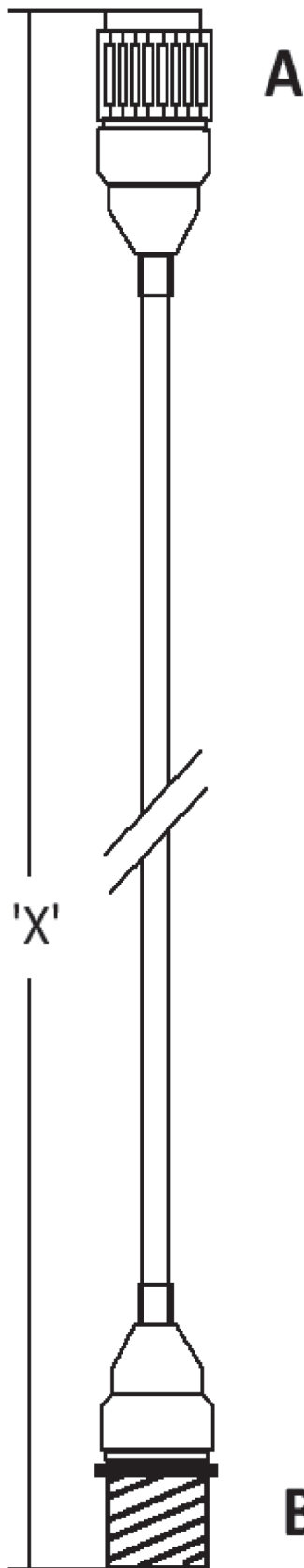
Pin No.	Function	To
1	Signal Ground	D5, A5
2	TX A	A6
3	RX A	A8
4	Not Used	--

C - WEATHERPACK - 2 pin Receptacle

Pin No.	Function	To
A	12 Power	A10
B	12V Ground	A11



CAN Extension Cables



Part Number	Length (X)
727104	45'
727107	24'
727108	35'
727109	60

A - Amp - 9 pin Plug

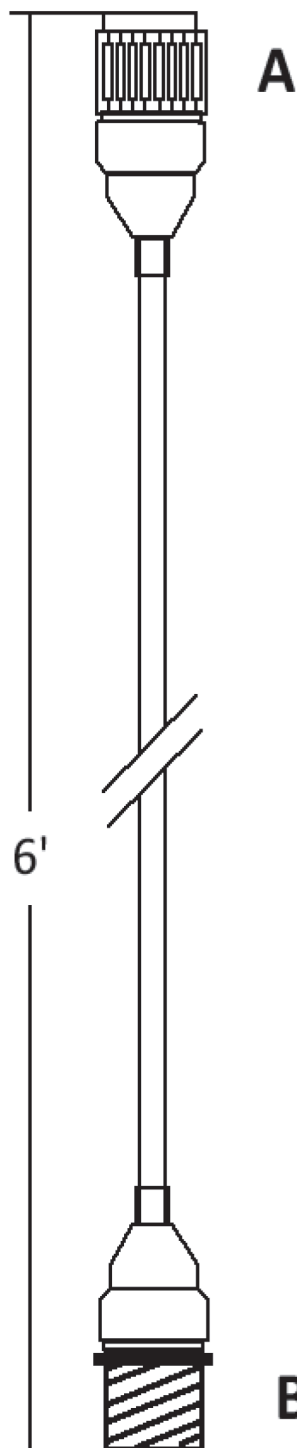
Pin No.	Function	To
1	Signal Ground	B1
2	CAN A LO	B2
3	Not Used	--
4	Not Used	--
5	Can Shield	B5
6	CAN A HI	B6
7	Not Used	--
8	Not Used	--
9	Power +12V	B9

B - AMP - 9 pin Receptacle

Pin No.	Function	To
1	Signal Ground	A1
2	CAN A LO	A2
3	Not Used	--
4	Not Used	--
5	Can Shield	A5
6	CAN A HI	A6
7	Not Used	--
8	Not Used	--
9	Power +12V	A9

Cab Control Module Harness Extension

Part #
727106



A - Amp 16 pin Receptacle

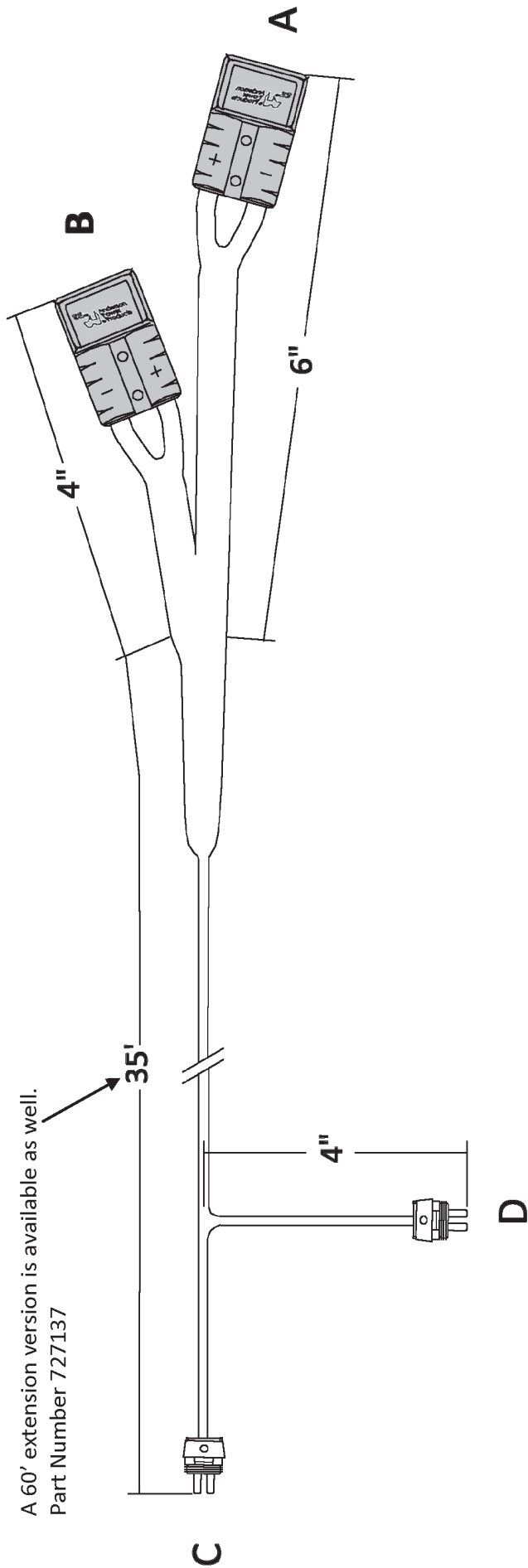
Pin No.	Function	To
1	Main Ground	B1
2	Not Used	--
3	485 Shield	B3
4	Not Used	--
5	Not Used	--
6	12 Volt Battery	B6
7	485 (-) Channel A	B7
8	485 (+) Channel A	B8
9	485 (-) Channel B	B9
10	485 (+) Channel B	B10
11	Not Used	--
12	GPS Ground/Shield	B12
13	RX from GPS	B13
14	TX to GPS	B14
15	GPS 5 Volt	B15
16	12 Volt Ignition	B16

B - Amp 16 pin Plug

Pin No.	Function	To
1	Main Ground	A1
2	Not Used	--
3	485 Shield	A3
4	Not Used	--
5	Not Used	--
6	12 Volt Battery	A6
7	485 (-) Channel A	A7
8	485 (+) Channel A	A8
9	485 (-) Channel B	A9
10	485 (+) Channel B	A10
11	Not Used	--
12	GPS Ground/Shield	A12
13	RX from GPS	A13
14	TX to GPS	A14
15	GPS 5 Volt	A15
16	12 Volt Ignition	A16

Auxiliary Power Extension Harness

Part #
727114



A - Anderson 992

Pin No.	Function	To
A +	Power +12V	B+, CA, DA
A -	Ground	B-, CB, DB

C - Weatherpack 2 pin Plug

Pin No.	Function	To
CA	Power +12V	A+, B+, DA
CB	Ground	A-, B-, DB

B - Anderson 992

Pin No.	Function	To
B +	Power +12V	A+, CA, DA
B -	Ground	A-, CB, DB

D - Weatherpack 2 pin Plug

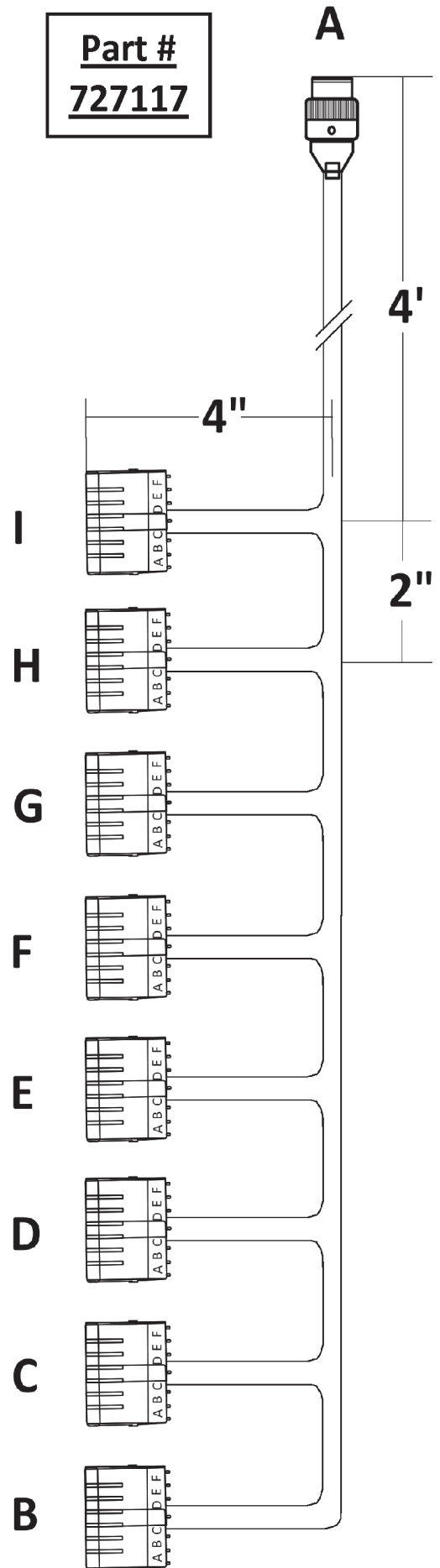
Pin No.	Function	To
DA	Power +12V	A+, B+, CA
DB	Ground	A-, B-, CB

John Deere Row Command Adapter Harness

A - Deutsch 35 pin Plug

From	Function	To
1	Row 1 Clutch Power	BB
2	Row 2 Clutch Power	BC
3	Row 3 Clutch Power	BD
4	Row 4 Clutch Power	BE
5	Row 5 Clutch Power	CB
6	Row 6 Clutch Power	CC
7	Ground	(B-I) A
8	Row 7 Clutch Power	CD
9	Row 8 Clutch Power	CE
10	Row 9 Clutch Power	DB
11	Ground	(B-I) A
12	Row 10 Clutch Power	DC
13	Row 11 Clutch Power	DD
14	Ground	(B-I) A
15	Row 12 Clutch Power	DE
16	Row 13 Clutch Power	EB
17	Row 14 Clutch Power	EC
18	Row 15 Clutch Power	ED
19	Row 16 Clutch Power	EE
20	Row 17 Clutch Power	FB
21	Row 18 Clutch Power	FC
22	Row 19 Clutch Power	FD
23	Row 20 Clutch Power	FE
24	Row 21 Clutch Power	GB
25	Row 22 Clutch Power	GC
26	Row 23 Clutch Power	GD
27	Row 24 Clutch Power	GE
28	Row 25 Clutch Power	HB
29	Row 26 Clutch Power	HC
30	Row 27 Clutch Power	HD
31	Row 28 Clutch Power	HE
32	Row 29 Clutch Power	IB
33	Row 30 Clutch Power	IC
34	Row 31 Clutch Power	ID
35	Row 32 Clutch Power	IE

Part #
727117



John Deere Row Command Adapter Harness Continued

**Part #
727117**

B - Weatherpack 6 pin Receptacle

From	Function	To
BA	Ground	A7, A14, (C-I)A
BB	Row 1 Clutch Power	A1
BC	Row 2 Clutch Power	A2
BD	Row 3 Clutch Power	A3
BE	Row 4 Clutch Power	A4
BF	Not Used - Plug	--

C - Weatherpack 6 pin Receptacle

From	Function	To
CA	Ground	A7, A14, BA, (D-I)A
CB	Row 5 Clutch Power	A5
CC	Row 6 Clutch Power	A6
CD	Row 7 Clutch Power	A8
CE	Row 8 Clutch Power	A9
CF	Not Used - Plug	--

D - Weatherpack 6 pin Receptacle

From	Function	To
DA	Ground	A7, A14, BA, CA, (E-I)A
DB	Row 9 Clutch Power	A10
DC	Row 10 Clutch Power	A12
DD	Row 11 Clutch Power	A13
DE	Row 12 Clutch Power	A15
DF	Not Used - Plug	--

E - Weatherpack 6 pin Receptacle

From	Function	To
EA	Ground	A7, A14, BA, CA, DA, FA, GA, HA, IA
EB	Row 13 Clutch Power	A16
EC	Row 14 Clutch Power	A17
ED	Row 15 Clutch Power	A18
EE	Row 16 Clutch Power	A19
EF	Not Used - Plug	--

F - Weatherpack 6 pin Receptacle

From	Function	To
FA	Ground	A7, A14, BA, CA, DA, EA, GA, HA, IA
FB	Row 17 Clutch Power	A20
FC	Row 18 Clutch Power	A21
FD	Row 19 Clutch Power	A22
FE	Row 20 Clutch Power	A23
FF	Not Used - Plug	--

G - Weatherpack 6 pin Receptacle

From	Function	To
GA	Ground	A7, A14, (B-F)A, HA, IA
GB	Row 21 Clutch Power	A24
GC	Row 22 Clutch Power	A25
GD	Row 23 Clutch Power	A26
GE	Row 24 Clutch Power	A27
GF	Not Used - Plug	--

H - Weatherpack 6 pin Receptacle

From	Function	To
HA	Ground	A7, A14, (B-G)A, IA
HB	Row 25 Clutch Power	A28
HC	Row 26 Clutch Power	A29
HD	Row 27 Clutch Power	A30
HE	Row 28 Clutch Power	A31
HF	Not Used - Plug	--

I - Weatherpack 6 pin Receptacle

From	Function	To
IA	Ground	A7, A14, (B-H)A
IB	Row 29 Clutch Power	A32
IC	Row 30 Clutch Power	A33
ID	Row 31 Clutch Power	A34
IE	Row 32 Clutch Power	A35
IF	Not Used - Plug	--

AgLeader SureStop Adapter Harness

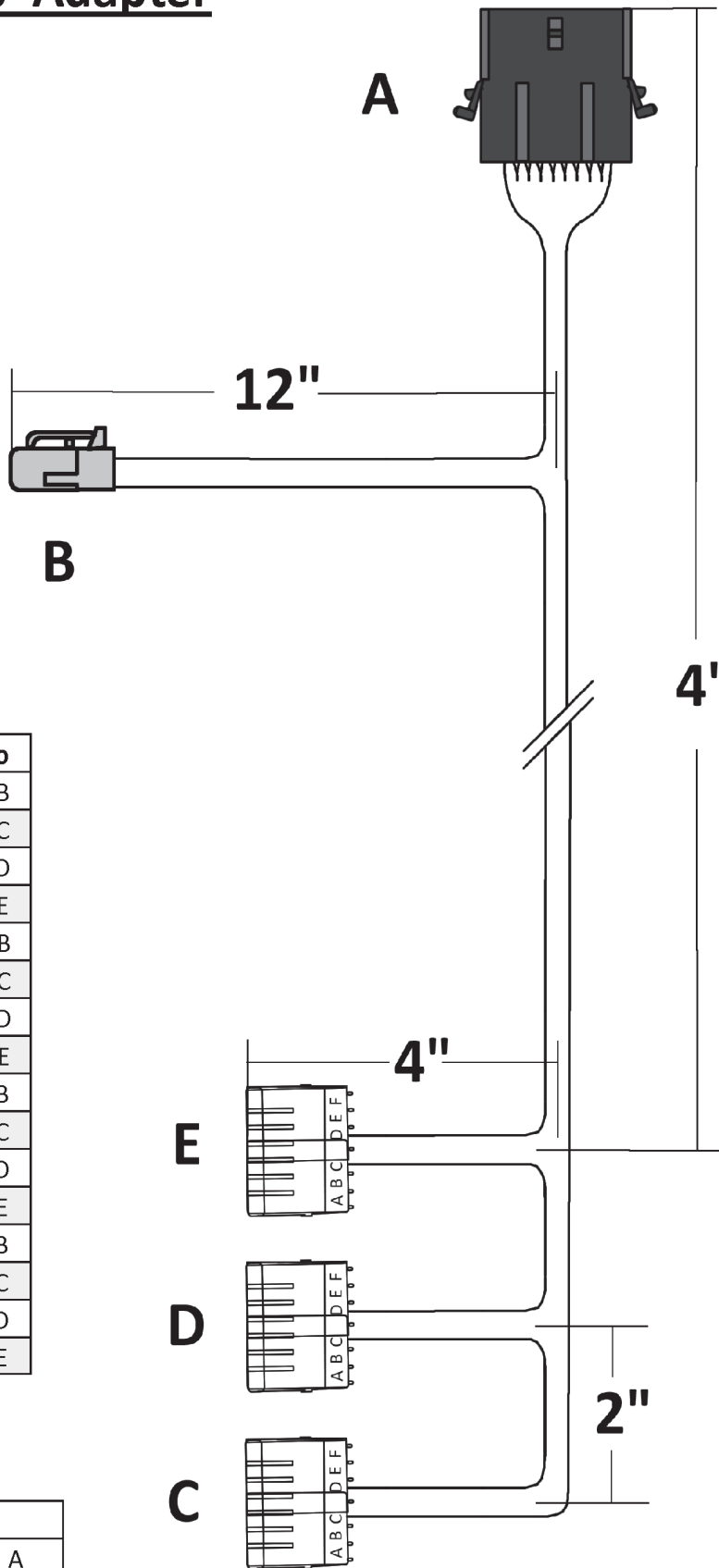
Part #
727118

A - Molex 16 pin Plug

Pin No.	Function	To
1	Row 1 Clutch Power	CB
2	Row 2 Clutch Power	CC
3	Row 3 Clutch Power	CD
4	Row 4 Clutch Power	CE
5	Row 5 Clutch Power	DB
6	Row 6 Clutch Power	DC
7	Row 7 Clutch Power	DD
8	Row 8 Clutch Power	DE
9	Row 9 Clutch Power	EB
10	Row 10 Clutch Power	EC
11	Row 11 Clutch Power	ED
12	Row 12 Clutch Power	EE
13	Row 13 Clutch Power	FB
14	Row 14 Clutch Power	FC
15	Row 15 Clutch Power	FD
16	Row 16 Clutch Power	FE

B - Deutsch 2 pin Plug

Pin No.	Function	To
1	Ground	(C-F) A
2	Not Used - Plug	--



AgLeader SureStop Adapter Harness

Continued

Part #
727118

C - Weatherpack 6 pin Receptacle

Pin No.	Function	To
CA	Ground	B1
CB	Row 1 Clutch Power	A1
CC	Row 2 Clutch Power	A2
CD	Row 3 Clutch Power	A3
CE	Row 4 Clutch Power	A4
CF	Not Used	--

D - Weatherpack 6 pin Receptacle

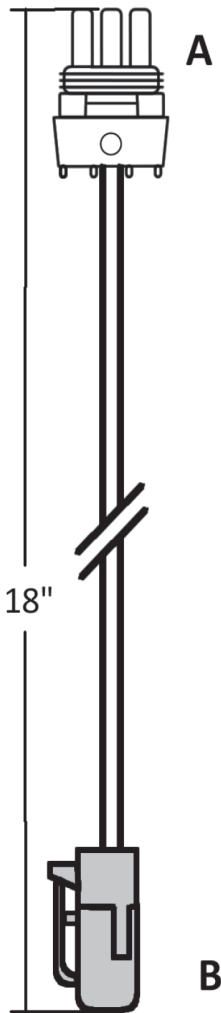
Pin No.	Function	To
DA	Ground	B1
DB	Row 5 Clutch Power	A5
DC	Row 6 Clutch Power	A6
DD	Row 7 Clutch Power	A7
DE	Row 8 Clutch Power	A8
DF	Not Used	--

E - Weatherpack 6 pin Receptacle

Pin No.	Function	To
EA	Ground	B1
EB	Row 9 Clutch Power	A9
EC	Row 10 Clutch Power	A10
ED	Row 11 Clutch Power	A11
EE	Row 12 Clutch Power	A12
EF	Not Used	--

Adapter Harnesses

Part #
727120



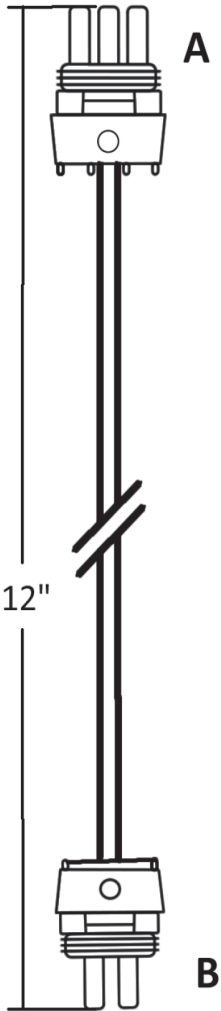
A - Weatherpack 2 pin Plug

Pin No.	Function	To
AA	Clutch Power	B1
AB	Clutch Ground	B2
AC	Clutch Ground	B2

B - Deutsch 2 pin Plug

Pin No.	Function	To
B1	Clutch Power	AA
B2	Clutch Ground	AB, AC

Part #
727121



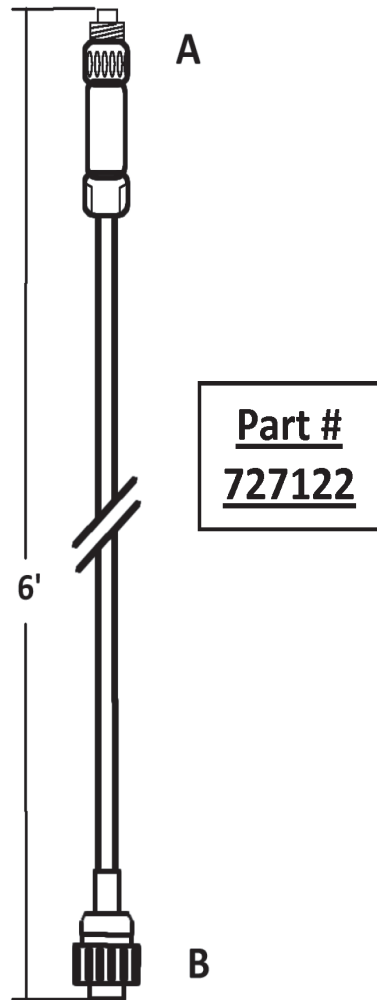
A - Weatherpack 3 pin Plug

Pin No.	Function	To
AA	Clutch Power	BA
AB	Clutch Ground	BB
AC	Clutch Ground	BB

B - Weatherpack 2 pin Plug

Pin No.	Function	To
BA	Clutch Power	AA
BB	Clutch Ground	AB

Radar Adapter Harness John Deere 30 series Tractors



A - Amphenol Ecomate 6+PE Male

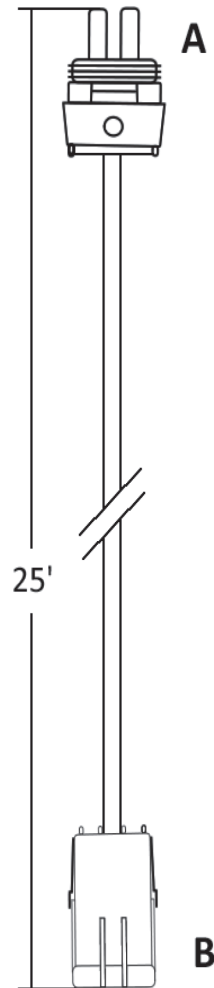
Pin No.	Function	To
1	Radar Signal	B2
2	Not Used	--
3	Not Used	--
4	Not Used	--
5	Not Used	--
6	Not Used	--
7	Ground	B1

B - Amp 4 pin Plug

Pin No.	Function	To
1	Ground	A7
2	Radar Signal	A1
3	Power Jumper	B4
4	Power Jumper	B3

Auxiliary Power Extension Cable

Part #
727126



A - Weatherpack 2 pin Receptacle

Pin No.	Function	To
AA	Power +12V	BA
AB	Ground	BB

B - Weatherpack 2 pin Plug

Pin No.	Function	To
BA	Power +12V	AA
BB	Ground	AB

Radar Adapter Cable Case MX & STX series

Part #
727139



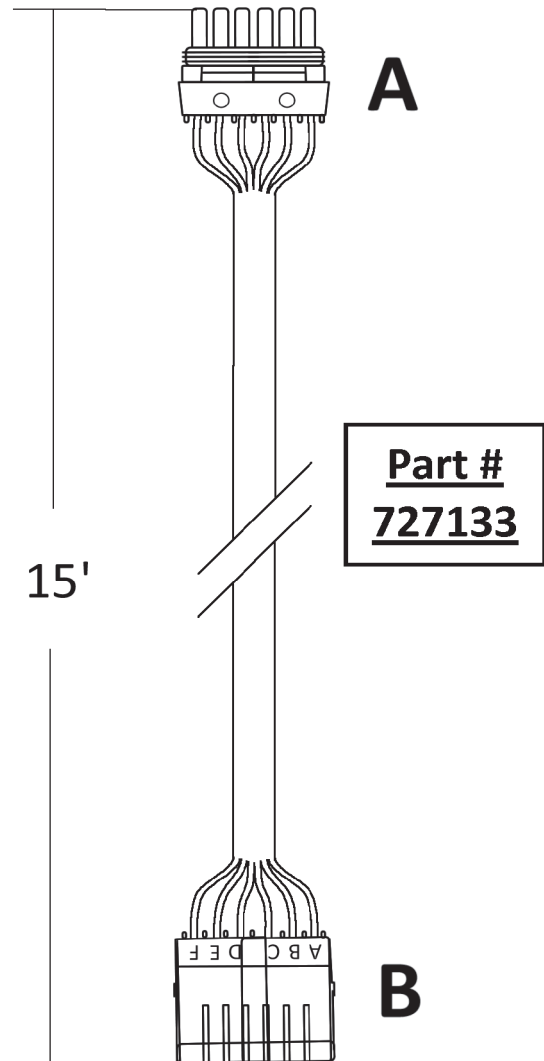
A - Britax Universal 2 Pole

From	Function	To
A_Outside	Ground	B1
A_Center	Signal	B2

B - Amp 4 pin Plug

Pin No.	Function	To
B1	Ground	A_Outside
B2	Signal	A_Center
B3	Power Jumper	B4

Clutch Harness Extension Cable



Part #
727133

A - Weatherpack 6 pin Plug

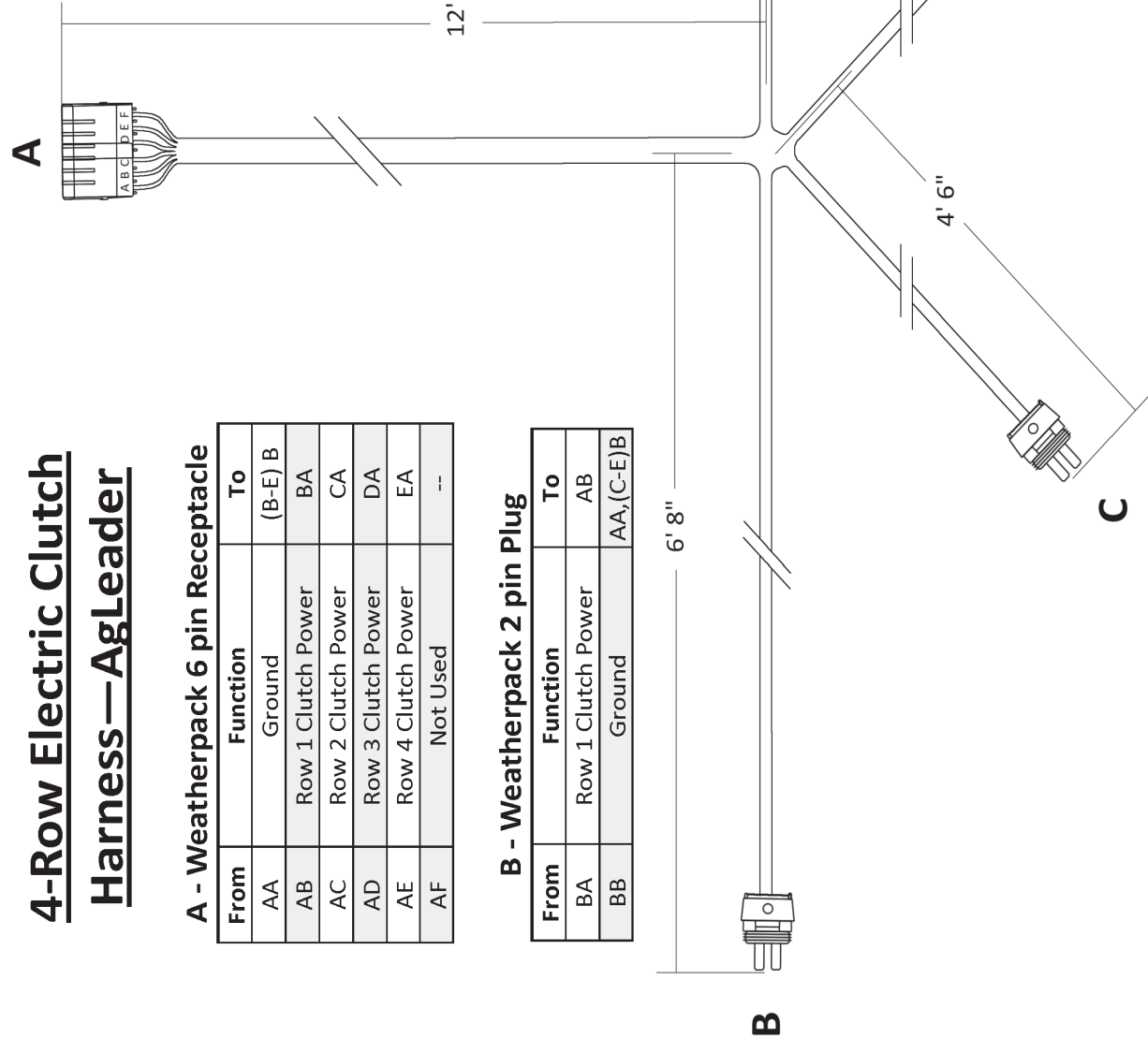
From	Function	To
AA	Ground	BA
AB	Row 1 Clutch Power	BB
AC	Row 2 Clutch Power	BC
AD	Row 3 Clutch Power	BD
AE	Row 4 Clutch Power	BE
AF	Not Used	--

B - Weatherpack 6 pin Receptacle

From	Function	To
BA	Ground	AA
BB	Row 1 Clutch Power	AB
BC	Row 2 Clutch Power	AC
BD	Row 3 Clutch Power	AD
BE	Row 4 Clutch Power	AE
BF	Not Used - Plug	--

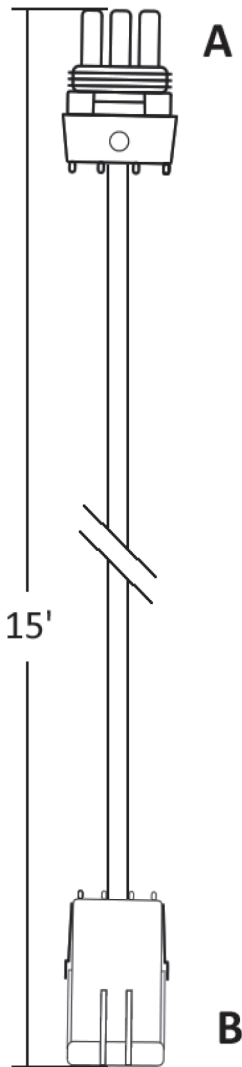
4-Row Electric Clutch
Harness—AgLeader

Part #
727135



Height Sensor Extension Harness

Part #
727116



A - Weatherpack 3 pin Plug

Pin No.	Function	To
AA	Height Signal	BA
AB	Sensor Ground	BB
AA	Sensor Power	BC

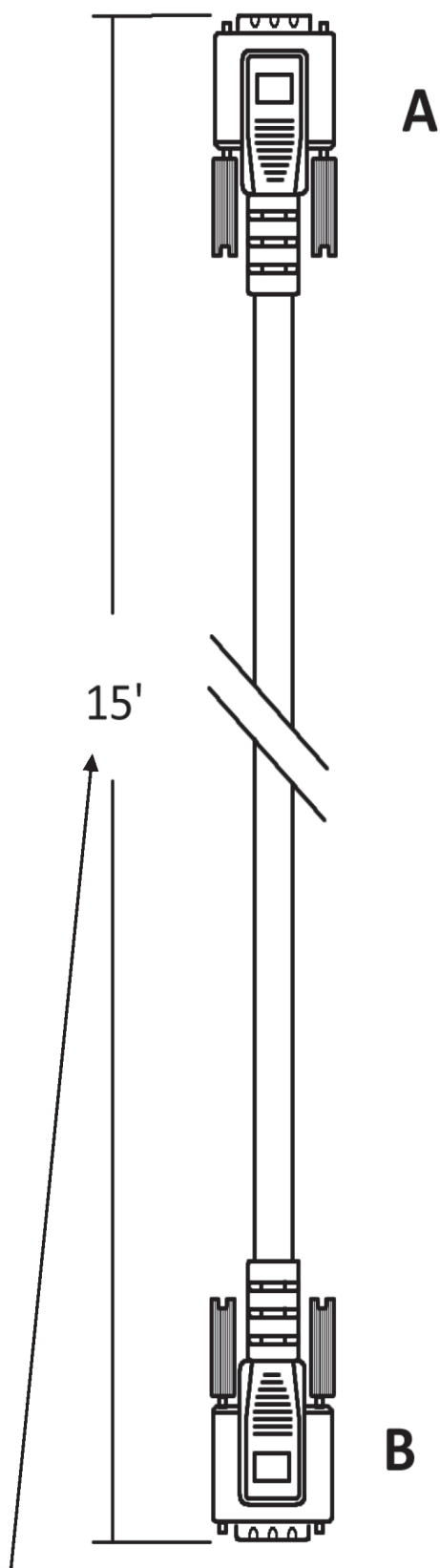
B - Weatherpack 3 pin Receptacle

Pin No.	Function	To
BA	Height Signal	AA
BB	Sensor Ground	AB
BC	Sensor Power	AC

DB9 Serial Extension Cable

Part #

727140



A 6' extension version is available as well.
Part Number 727140.

A - Male DB9

Pin No.	Function	To
1	Not Used	B1
2	TX B	B2
3	RX B	B3
4	Not Used	B4
5	Signal Ground	B5
6	Not Used	B6
7	Not Used	B7
8	Not Used	B8
9	Not Used	B9

B - Female DB9

Pin No.	Function	To
1	Not Used	A1
2	TX B	A2
3	RX B	A3
4	Not Used	A4
5	Signal Ground	A5
6	Not Used	A6
7	Not Used	A7
8	Not Used	A8
9	Not Used	A9